NOVEMBER 15, 1954

Stockholders Are People . . . p. 69

RAILWAY AGE

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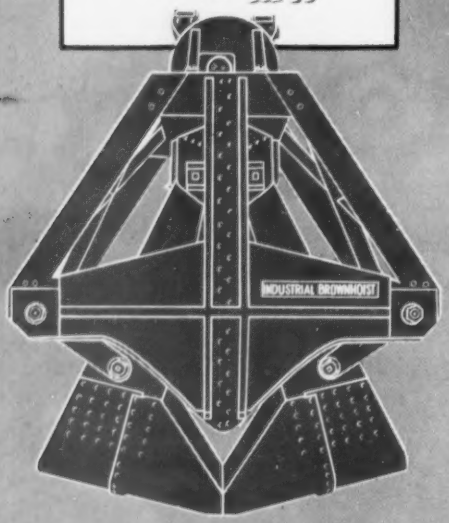
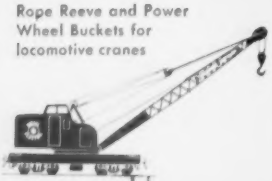
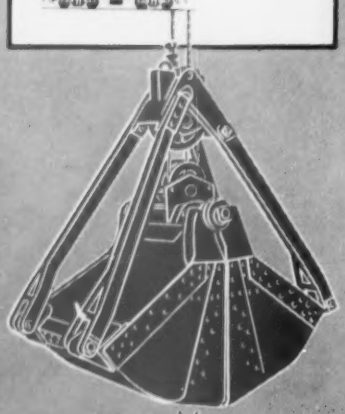
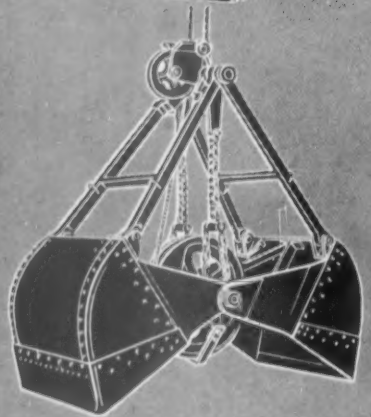


Rope Reeve and Power Wheel Buckets for locomotive cranes







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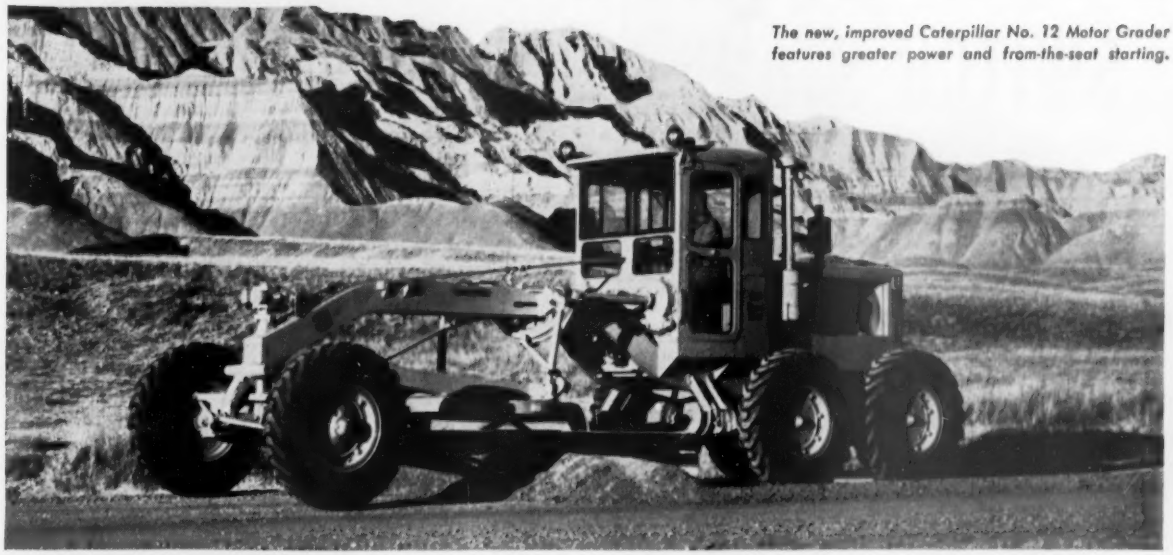

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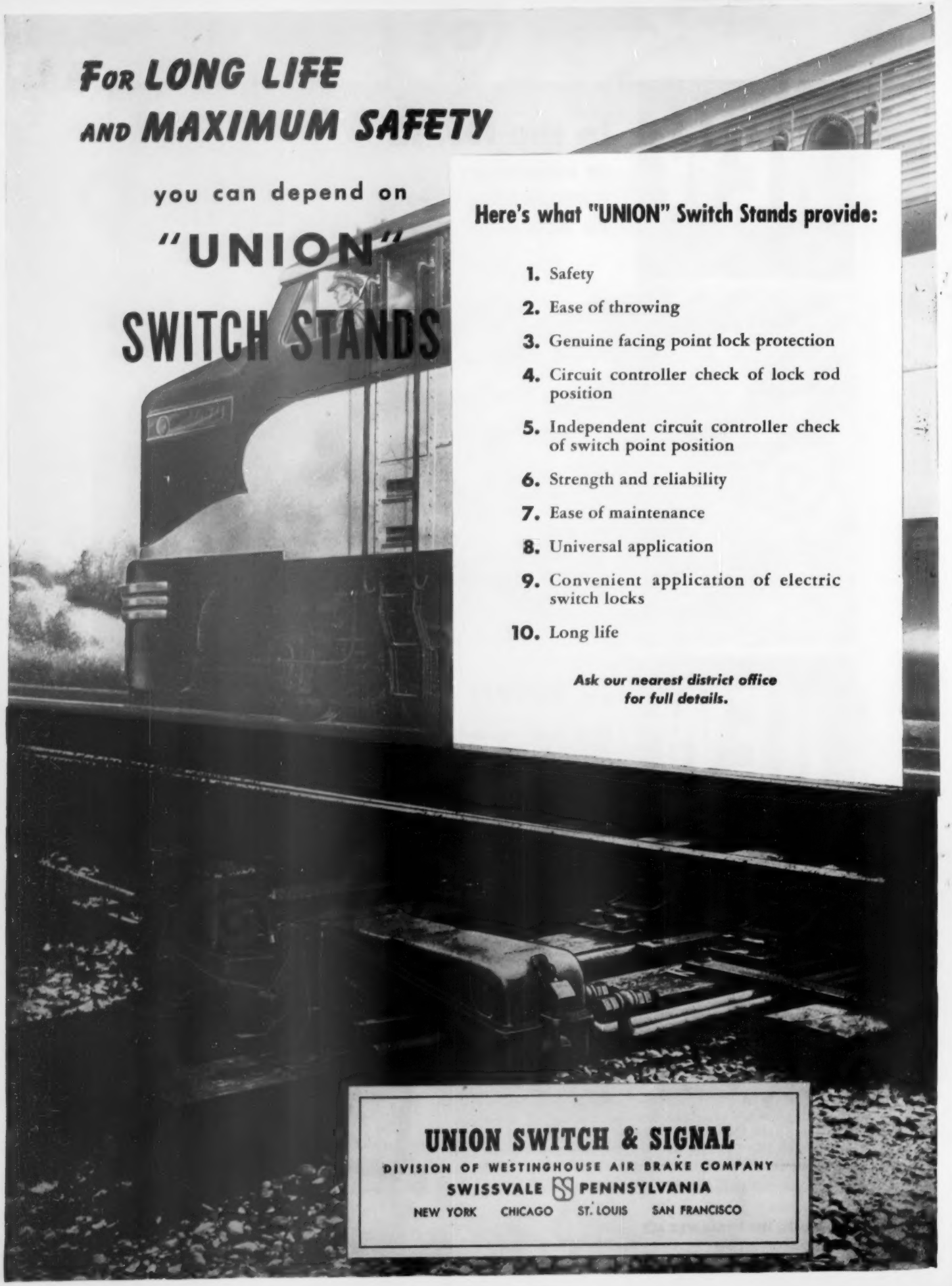

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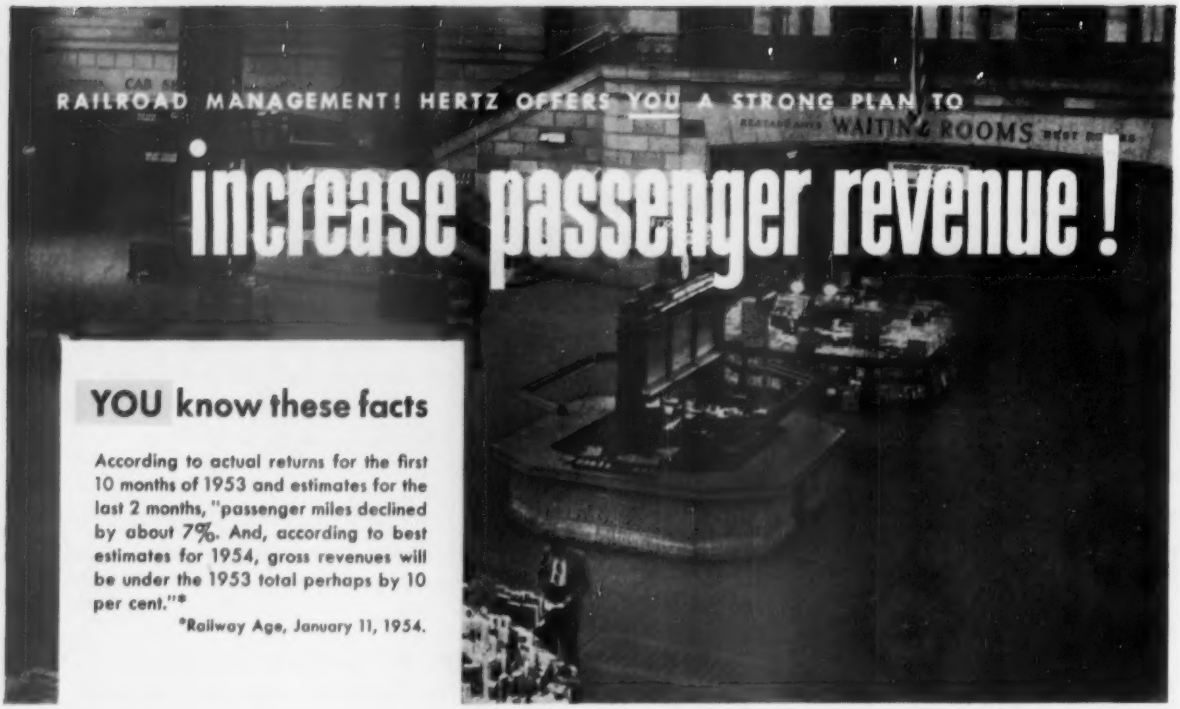
Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn., under the Act of March 3, 1879. Name registered in U. S. Patent Office and Trade Mark Office in Canada. Simmons-Boardman Publishing Corporation: James G. Lyne, president. Arthur J. McGinnis, executive vice-president and treasurer. Samuel O. Dunn, chairman emeritus. J. S. Crane, vice-president and secretary. Harry H. Melville, C. W. Merriken, John R. Thompson, William H. Schmidt, Jr., J. S. Vreeland, Fred W. Smith, Robert G. Lewis, vice-presidents. Michael J. Figa, Jr., director of production. Ralph E. Westerman, assistant treasurer.

November 15, 1954 **Vol. 137, No. 20**

Week at a Glance



YOU know these facts

According to actual returns for the first 10 months of 1953 and estimates for the last 2 months, "passenger miles declined by about 7%. And, according to best estimates for 1954, gross revenues will be under the 1953 total perhaps by 10 per cent."*

*Railway Age, January 11, 1954.

YOU also know that inter-city driving is largely responsible for the decreasing revenues.

HERTZ Rail-Auto Plan is the most successful solution!

It is estimated that in 1953 motorists drove close to 500 billion miles between cities. Analysis shows that they drove these hazardous, tiring miles . . . NOT because they preferred to drive . . . BUT many times because they needed a car at their destination!

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how YOU can help promote the Hertz Rail-Auto Plan for Additional Revenue

1 TRY the Rail-Auto Plan yourself. Enjoy its many advantages. See for yourself why thousands of travelers prefer it to highway travel.

2 URGE your ticket agents to ask passengers this simple question: "*May I reserve a Hertz car for you at your destination?*" The Hertz station concerned will pay—promptly—10% commission on the total rental charge.

3 FREE! Hertz provides plastic 3¼" signs attractively printed with these words: "*Reserve your Hertz Rent-A-Car from your ticket agent.*" These signs clamp on the grill of your ticket agents' windows, or stand on the counter.

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4 HERTZ spends nearly $1,000,000 a year in leading national magazines to sell the Rail-Auto Plan. In your own advertising, promote the Plan. Show its many advantages. Use displays in your ticket offices. Advertise the Plan in your timetables . . . on your billboards . . . highway over-passes.

5 AND REMEMBER—only Hertz—the world's largest rent-a-car system—offers 30 years' experience . . . with more than 8,600 cars at nearly 850—offices in over 550 cities throughout the world. Every car is new, clean . . . and Hertz furnishes all gasoline, oil . . . and proper insurance—*at no extra cost!* Only Hertz has more than 1,500,000 people who hold Hertz Charge Cards and Courtesy Cards. (Hertz also honors Rail Credit Cards.)

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Current Statistics

Operating revenues, nine months	
1954	$ 6,975,490,037
1953	8,082,250,257
Operating expenses, nine months	
1954	$ 5,546,999,420
1953	6,087,046,185
Taxes, nine months	
1954	$ 658,143,188
1953	972,804,921
Net railway operating income, nine months	
1954	$ 580,613,411
1953	845,430,758
Net income, estimated, nine months	
1954	$ 394,000,000
1953	650,000,000
Average price railroad stocks	
November 9, 1954	74.38
November 10, 1953	59.80
Carloadings, revenue freight	
Forty-four weeks, 1954	28,659,890
Forty-four weeks, 1953	33,090,868
Average daily freight car surplus	
November 6, 1954	28,925
November 7, 1953	11,002
Average daily freight car shortage	
November 6, 1954	2,790
November 7, 1953	2,289

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Week at a Glance CONTINUED

CTC speeds trains on grades, on 95 miles of the KCS through the Ouachita mountains. 67

Stockholders are people, says Howard G. Mayer, public relations counselor—who also suggests a course of action to prevent "management upheavals." 69

What next in railroad progress? The industry, says Rock Island Vice-President D. B. Jenks, has "only begun to scratch the surface" of its true potential in new equipment and new ways of doing business. 71

How did your railroad do, dollarwise, in September and the first three-quarters of 1954? How does its showing this year compare with last year? Or with what other roads are doing? The answers, for Class I carriers, are in the monthly Revenue and Expense tables which, in this issue, begin on page . . . 80

BRIEFS

The Pennsylvania has entered into an agreement with the Rail-Trailer Company to begin piggyback hauling of trailers of trucking companies. The railroad will continue to handle rail-billed freight in its own trailers, and is extending this service to St. Louis and vicinity and to the Wheeling-Steubenville area. The Baltimore & Ohio plans to extend its "Tofcee" service soon to the same territories, and also into the New York metropolitan area.

Capital expenditures contemplated by the Southern Pacific in 1955 may exceed its average for the past five years, President D. J. Russell told New York security analysts last week, with a large chunk of the money likely to go for more new diesels. Mr. Russell also revealed that the road's expanding piggyback services are bringing in "new revenue"; and that the SP is continuing its experiments with industrial television, with a possible hookup between train dispatching offices under consideration.

Law & Regulation

Cabinet Group Gets NITL Views

League still opposes rewriting of rate-making rule to eliminate reference to "effect of rates on movement of traffic"

The National Industrial Traffic League has advised the Cabinet Committee on Transport Policy that it is opposed to rewriting the Interstate Commerce Act's rate-making rule to eliminate the provision which requires the Interstate Commerce Commission to consider "the effect of rates on the movement of traffic by the carrier or carriers for which the rates are prescribed."

The cabinet committee, established by President Eisenhower last July, is scheduled to make its report by December 1. The league's presentation was embodied in a November 4 letter signed by its president, Andrew H. Brown. The railroad industry's presentation, submitted earlier by the Association of American Railroads, calls for a rewriting of the rate-making rule (*Railway Age*, November 8, page 7).

Time-Lag—Meanwhile, the league went along with the railroad proposal in favor of so-called "time-lag" legislation which would be designed to insure prompt commission action in granting rate increases as carrier costs rose. At the same time, the league had this further to say:

"To properly protect the shipping public against payment of unreasonable and excessive charges, safeguards must be provided whereby shippers and receivers of freight will be entitled to refunds upon demand, without further action by the commission, in an amount by which the increases in charges paid by the shipper exceed the maximum increases authorized in the final decision and report of the . . . commission."

Other parts of the league presentation reiterated its stand on various matters, including its position in favor of a single regulatory agency with jurisdiction over all forms of transport. The league also urged that:

(1) Each form of transport should pay its own way without any subsidies from the government;

(2) The government and all its agencies should be required to pay the full applicable commercial rates, fares or charges for transportation of persons or property by any carrier subject to the Interstate Commerce Act or Civil Aeronautics Act;

(3) Various governmental agencies should be charged for the cost of handling mail by the Post Office Department; and

(4) Rates on parcel post should be sufficient so revenue derived from transportation of such mail will not be less than expenses incurred.

Rate-Making Rule—In its argument against rewriting the rate-making rule, the league said it "strongly favors" continuation of the "present principles" of Section 15A—because that "is necessary to allow shippers to determine the mode of transportation which best fits their needs." The argument also included the following:

"It may appear to be an interference with carrier management to require the commission to consider the effect of rates on movement of traffic. . . In fact, however, the commission could not properly determine a just and reasonable rate under which the commerce of the country could move freely without taking into account the effect of any proposed rate on movement of traffic.

"Section 15A, as originally enacted, emphasized the revenue needs of the carriers. It was amended in 1933 so as to emphasize not only the revenue needs of the carriers, but also the adequacy of efficient railroad service at the lowest cost consistent with the furnishing of such service. In other words, the emphasis was divided as between the public and the carriers. To now change the rule so as to emphasize carrier revenue and eliminate any requirement to consider the effect of rates on movement of traffic (by the carrier or carriers for which the rates are prescribed) would deprive the shipping public of the inherent advantages of each form of transportation."

The league also advised the committee that it considers private ownership and operation of transport services as one of the "outstanding principles" to which it has always adhered. Another is continuance of the ICC "as an independent regulatory agency reporting only to the Congress."

BRT Study Cites Effects Of Transportation Taxes

Repeal of the tax on passenger transportation would benefit users of both passenger and freight transportation, as well as consumers generally, according to a study made by the Public Affairs Institute at the request of W.

YES, 20 YEARS HAVE PASSED since the Burlington's "Pioneer Zephyr" (foreground) made its epochal nonstop dawn-to-dusk dash from Denver to Chicago in 13 hours, 5 minutes. Many railroad historians consider that famous run (1,015.4 miles at an average of 77.61 mph) as the birth of the diesel streamliner era. Today—with a fourth car added to its consist—the veteran streamliner still carries on "modestly and reliably" in daily service between Galesburg, Ill., and St. Joseph, Mo., handling local traffic in support of the "Kansas City Zephyr," seen here beside it. The Burlington reports that, after 2,700 miles of service, the "Pioneer's" stainless steel exterior "is still gleaming and its interior paint and upholstery are clean and unworn." The "Zephyr" fleet today numbers 13 trains.

P. Kennedy, president of the Brotherhood of Railroad Trainmen.

The study, concerned primarily with the effect of transportation taxes on the volume of traffic and the amount of employment in the industry, added that repeal of the tax on freight transportation "could be expected in some measure to reduce the cost of living."

Another Seatrain Case Dismissed by ICC

The Interstate Commerce Commission has discontinued its investigation of tariffs covering through routes over the Pennsylvania and Seatrain Lines via Edgewater, N. J.

The discontinuance was requested by the PRR, as the commission noted (*Railway Age*, August 23, page 8). The commission recently discontinued another Seatrain proceeding which involved a complaint wherein a group of railroads sought a commission determination of how Seatrain fitted into the national transportation picture. That discontinuance resulted from withdrawal of the complaint.

Hutchins, Arpaia Speak At Hartford Conference

It is to the interest of shippers and the public that railroads be allowed a full and fair chance to handle all traffic for which they are inherently best suited, C. M. Hutchins, chairman and president of the Bangor & Aroostook, said in Hartford, Conn., recently.

Mr. Hutchins, addressing an area transportation conference sponsored by the U. S. Chamber of Commerce and the Connecticut and Hartford chambers, added that "public transportation policies which tend to reduce the level of railroad traffic artificially and unnecessarily have a double effect in increasing the real and total cost of transportation. Such policies increase transportation costs by artificially shifting traffic from the lower-cost to the higher-cost means of movement, and this diversion of traffic has the further adverse effect of adding to the cost of hauling that traffic which remains on the rails."

Public transportation policies should be revised to give each form of transportation, particularly common carriers, a free and equal chance to compete for traffic, Mr. Hutchins said. "This equality of regulation," he emphasized, "should be achieved by de-regulation of railroads, rather than more regulation of other forms of transportation."

Interstate Commerce Commissioner Anthony F. Arpaia, who also addressed the conference, predicted eventual development in this country of a completely coordinated system of transportation, in which each form would participate. Mr. Arpaia warned, however, that "the negative effect of the present practices of each type of transport cannot be overlooked. To preserve for itself the maximum share of available traffic, each feels it necessary to stymie to the greatest extent the public acceptance of the others—those already existing and those in prospect."

Such activity is regressive, the commissioner said, adding that if the present trend is not checked, whatever business is left to public transportation is going to become less and less remunerative, leading to further deterioration in service and added diversion of traffic to private transportation.

Safety

Safety Films Take Spotlight

Their role, their showing and their production are explored in a special seminar of the National Safety Council's Railroad Section

A detailed study of motion pictures and their use in safety training on a railroad highlighted the Railroad Section meetings at the National Safety Council's 42nd annual congress and exhibition in Chicago the week of October 18. A special seminar on the subject was arranged by Robin Greenfield, general supervisor of safety, loss and damage prevention of the Canadian Pacific, who is chairman of the section's film committee.

The value of motion pictures as a training medium first became apparent during World War II, E. H. Blewer, assistant manager of safety of the New York Central, told the seminar audience. "More people were trained then in a short length of time by use of films than was ever before thought possible," he said. Showings even where room is limited, as in yard offices, rip tracks, engine-houses and foremen's offices, can be advantageous, he feels, for "as a general rule, small audiences are more receptive than large ones."

Mr. Blewer said the section's questionnaire on films and their usage brought out the fact that many roads still feel they cannot afford them. "I sincerely believe," he stated, "that any railroad, large or small, can carry on an intelligent film program at very small cost. Many railroads have films free, and projectors can be rented, if necessary, from a local film service company at a nominal charge."

Make Your Own?—If a carrier embarks upon a program of films for safety training, it generally finds that films borrowed from other organizations and even other railroads are not fully effective, because they have only indirect application on "home ground."

The next step is to make a film on company property for company use. This may be done with talent within the company, or it may be done commercially.

Early efforts to produce a safety training film without recourse to commercial film production facilities should be simple and direct, advised Edward L. Carroll, a Southern Pacific safety supervisor. "Start your production with a narrative-type film touching on only one or two subjects." A "how to do it" or "how it happened" film can be effectively produced with straightforward photography and simple editing procedure, he said; and described how the SP's film "Dangerous Playground" was created to cope with the problem of trespassing by school children—a problem which the company's police department found it could not solve because its staff was too small for the number of schools to be covered.

Or Employ Professionals?—The other approach to producing safety films—that of having the entire production handled by an outside professional film production organization—was outlined by J. T. Williams, manager of safety for the Pennsylvania.

Admitting that direct costs of a commercial film are higher, he added: "Perhaps you haven't the time to make a film yourself, or feel you haven't the natural creative or artistic talent necessary. You may have also considered that you are playing to a tough audience, a blasé audience conditioned by familiarity with topnotch TV and Hollywood shows that would place any amateur's efforts at a decided disadvantage. Naturally, we want to avoid any implication that our safety efforts are make shift." He went on to outline the procedure of selecting and working with a commercial film producer.

Who Sees Them?—The problem of distributing films from a company library so a scattered work force obtains equal training from them was outlined by D. P. Russell, supervisor of the CPR bureau of safety, loss and damage prevention. Said Mr. Russell:

"Today, we have in our library some 255 films comprising safety, loss and damage prevention, trespassing and a good assortment of entertainment films to lend a little variety to the program of safety films. It very quickly became evident that we could not rely on indiscriminate bookings as requested by various field men to provide adequate distribution. The tendency of some to tie up a popular film for extended periods when they only required the picture for several showings scattered over that period, gave rise to a lot of heartburning and pointed questions. This

not only resulted in a lot of time being wasted due to films being cross-hauled, but made it very difficult for the field man to plan a proper coverage of his territory.

"The net result is that we have set up what we call a 'circuit' for our new films, and retain the older films in a pool in the bureau on which field men are free to draw to supplement what they receive on the circuit."

More Discipline Needed? — To provide greater effectiveness for the work of safety officers, R. K. Bradford, vice-president, Denver & Rio Grande Western, suggested that what he termed the "propaganda side" of safety be coupled with greater discipline. Speaking at the section's opening meeting, he said:

"Most roads have officers exclusively devoted to promoting the cause of safety—endeavoring to convince the employee that it is good business for him to be safe. Most roads have safety rules which these staff officers endeavor to sell to the employee as an aid in keeping him free from injury or danger.

"Additional progress can be made only if it is agreed among us that responsibility for additional results in all phases of our operations — train service, yard service, maintenance of way, maintenance of equipment—rests with line officers. If we line officers dodge that responsibility, we handicap our staff of safety officers to an incalculable extent. If the injury analysis by the staff officer indicates an unsafe condition, line officers will, I believe, do what they can to overcome the hazard by corrective measures. If the hazard cannot be entirely removed—and sometimes it cannot—then precautionary measures will be taken through warnings, etc., to prevent or reduce recurrence. But if the injury is the result of pure carelessness, stupidity or violation of a safety rule, I am afraid in too few cases is the discipline sufficient to act as an effective warning for the future.

"Perhaps we in the line have paid too much attention to the law of 1937 [Federal Employers Liability Act] which said in effect that there can no longer be an injury caused by contributory negligence of the injured—or if that, in spite of the law, such an injury did occur, the contributory negligence of the injured man was to be treated as only incidental to the injury and not the prime cause.

"If we believe that the law of 1937 actually removed the contributory negligence factor, then we are not going to get the results we seek. On the other hand, if we are old reactionaries and fundamentalists who believe that roughly 60 to 90% of our accidents are caused by the human element—by an employee failing in his duty—and that human failure is nothing more nor less than contributory negligence in spite of the law to the contrary, then it follows, I believe, that we either have poor rules and practices, or that we are not enforcing obedience to such rules. We have worked out practices, operating and safety rules, which, if obeyed, would practically eliminate accidents and personal injuries on our railroads, and we must, therefore, confess that our propaganda is good but our discipline is not.

"Let's disregard the law of 1937, which attempted, by legislation, to outlaw the greatest of all enemies of good safety record—contributory negligence. Let's take the matter in hand and when we have accidents caused by contributory negligence and failure to comply with rules, take necessary disciplinary action so we can sell this safety idea in spite of the sales resistance we meet."

NEW GENERAL CHAIRMAN of the National Safety Council's Railroad Section is F. R. Callahan, director of safety and compensation of the Pullman Company, seen here at the microphone. Behind him is the retiring chairman, R. S. James, superintendent of safety and fire prevention of the D&RGW. Others in the photo, from left to right, are: J. T. Williams, manager of safety, Pennsylvania; J. R. Thexton, superintendent of safety, Lackawanna; and Robert Scott, director of safety and insurance, Atlantic Coast Line. New vice-chairman of the section is C. T. DeWitt, superintendent of safety and fire prevention, Northern Pacific.

September Accidents

The Interstate Commerce Commission has released its Bureau of Transport Economics and Statistics' preliminary summary of railroad accidents for September and the first nine months of 1954.

The compilation, subject to revision, follows:

Item	Month of September 1954	1953	9 months ended with September 1954	1953
Number of train accidents*	584	801	5,542	6,860
Number of accidents resulting in casualties	33	51	339	404
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	98	102	666	772
Injured	81	92	697	766
Passengers on trains:				
(a) In train accidents*				
Killed	..	..	4	20
Injured	56	3	306	436
(b) In train-service accidents				
Killed	2	1	13	16
Injured	131	150	1,316	1,349
Travelers not on trains:				
Killed	1	1	3	6
Injured	57	84	607	606
Employees on duty:				
Killed	14	21	149	225
Injured	1,361	1,612	12,040	14,727
All other nontrespassers:**				
Killed	115	119	987	1,135
Injured	363	431	3,560	3,862
Total—All classes of persons:				
Killed	230	244	1,822	2,174
Injured	2,049	2,372	18,526	21,746

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of $350 or more to railway property. Only a minor part of the total accidents result in casualties to persons, as noted above.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nontrespassers, were as follows:

Persons:				
Killed	107	115	904	1,057
Injured	221	297	2,340	2,543

Labor & Wages

Carriers Refuse Arbitration In ORC&B Driver Case

Terming the demand "unjustified" and a "disguised attempt to raise wages," the three regional carriers' conference committees have refused arbitration of the locomotive-weight graduated pay case with the Order of Railway Conductors & Brakemen.

The demand is an unsettled remainder from the union's general demands which were served upon the carriers in June 1953. The settlement [five cents an hour; incorporation into basic wage rates of 13 cents an hour accumulated under a previous escalator provision in the contract; three weeks vacation for employees of 15 or more years service, etc.] left the union's demand for graduated pay based on weight on drivers of the locomotive hauling the train, in mediation and "temporarily recessed." Late last month the union rejected a bid of the National Mediation Board to arbitrate the case, at which time President Roy O. Hughes said his organization would "follow other procedures" to bring the case to a "satisfactory conclusion."

The carriers' rejection was announced jointly by the Eastern, Southeastern and Western Carriers' Conference Committees. "The request of the organization cannot be justified on any ground. It is nothing but a disguised attempt to raise wages," the committees said. "The weight of the locomotive has nothing whatsoever to do with the services for which a conductor is paid. This same issue was thoroughly considered and subsequently denied by a Presidential fact-finding board back in 1950. In recommending that the conductors' request be with-

drawn the board said that is was 'unable to discover any logical or factual basis for granting conductors a graduated basis of pay.' " Since 1950, the carriers' statement said, the railroads have granted "very substantial" wage increases totaling 34½ cents an hour to conductors as well as additional paid vacation periods which "adequately compensate them for service performed. Average annual earnings of road conductors rose from $4,165 in 1945 to $5,710 in 1950 and are now $6,802. . . . It is simply impossible to consider further wage increases."

Overseas

France Extending Use Of 50-Cycle Electrification

Since the end of World War II, the French National Railroads have been conducting a program of research and testing to develop use of 50-cycle, 25,000-volt a-c power for railroad electrification. Most French electrified railroads use 750- or 1,500-volt d-c power, and the 50-cycle a-c system is attractive, since it permits a lighter contact system and requires no rectifiers or rotary equipment in substations. It is expected that the new system will enable the FNRR to electrify lines more rapidly, while remaining within credit limits of their equipment plan; and also to benefit by increased income from electrification.

A trial of the new system, conducted in the region of Annecy since 1950, has proved its effectiveness, and has led the French to apply it in their northeastern area.

Three new locomotives—the first of an order of 162—have been delivered and have proved their effectiveness on the line from Valenciennes to Charlesville, an 85-mile section which includes 1% grades.

One of the three locomotives is a C-C type. It is designed for freight service and is the first of 102 to be built by Societe Alsthom.

There are also two B-B type locomotives for freight and passenger service, built by Le Materiel de Traction Electrique (Schneider, Jeumont, S.W.). One employs single-phase Jeumont motors and is the first of an order for 24 units. The second, the first of 14 units, will be equipped with Ignitron rectifiers.

Another series of 22 type C-C locomotives, to be built by the Societe Oerlikon, will incorporate a different principle of power conversion. These will go into production at the end of this year.

Traffic

RRs Need More Intensive Cost Studies, Says Smucker

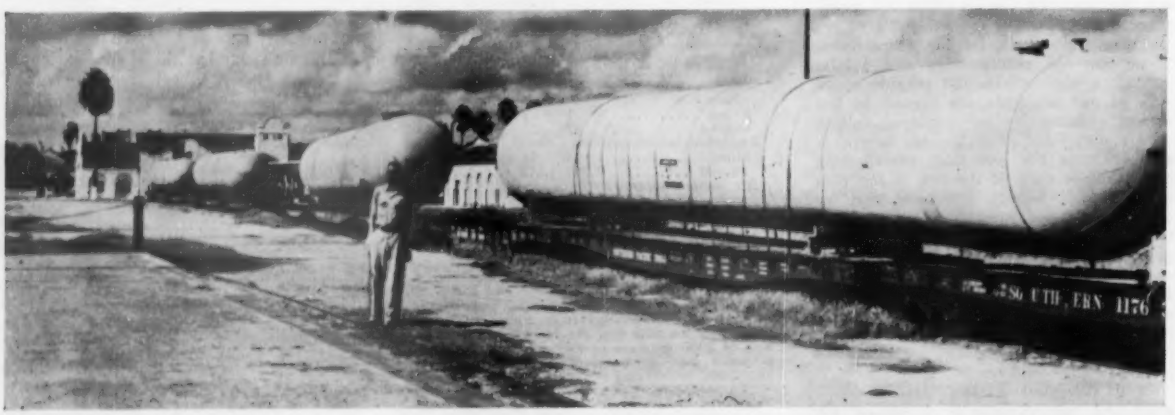
Railroads should engage in more cost study for rate-making purposes—not only of their own costs and costs of competitive transportation agencies, but of incidental costs the shipper incurs when he uses each of the several agencies of transportation. Such was the counsel offered by David E. Smucker, president of the Detroit, Toledo & Ironton, in a November 1 address to the Detroit Railroad Community Relations Committee.

"There has been too much inclination to consider that when we establish a competitive rate we have solved the problem," said Mr. Smucker. "Actually, the level at which we have to be competitive is the total cost to the shipper and consignee of using our service, of which the rate, while an important part, is still only a part. As an example, railroads recently reduced rates on manufactured iron and steel articles with particular impact on heavier loads for which we have an undeniable inherent advantage. The iron and steel business didn't come back to us in a rush and there is still doubt as to whether the reduction in rates will result in an increase in railroads' gross.

"One reason for this is that shippers of iron and steel products have to pay more to load and protect freight when it moves by rail, where it is subject to shock, than they do when they ship it by truck, where it is not. Individual roads are researching the problem of reducing expenses for this blocking, bracing and dunnaging by providing a type of protection that can be used many times instead of once, thus spreading its cost over many loads so it becomes the insignificant item it should be. This is a single example of the futility of rate reductions alone, and a clear call for research and investigation which will give us the facts upon which we can base a campaign of effective action to bring properly rail-adapted tonnage back to railroads.

"Too much emphasis is given to transit time within the general framework of the word 'service'," the speaker added. "We might as well realize that, in a large manufacturing establishment, a motor truck which can back up to any particular spot in the plant actually gives more service than the railroad possibly can, restricted as it is to placing a car on the nearest available car spot. Thus the measure of the rate paid our principal competitors may actually buy more transportation and save the shipper and consignee more money than is at first glance obvious from a comparison of tariff publications.

"If transit time were as important as some people would have us believe, we just simply wouldn't have tremen-



GIGANTIC PRESSURE TANKS, each of which must be carried on three flat cars, have been moving out of J. B. Beaird Company's Shreveport, La., plant en route to Reynosa, in the Mexican state of Tamaulipas. A portion of the $367,581 order is shown at Brownsville, Tex., before starting the final leg of the journey to the new Reynosa gasoline plant of Petroleos Mexicanos, petroleum operation of the Mexican government.

dous volumes of manufactured products moving by the slowest possible means, that is, inland waterways. Right here in Detroit, we see boatloads of new automobiles moving to Buffalo for highway movement beyond. Believe me, the only reason they move that way is because that is the cheapest way to do it. Enormous tonnages of pipe and well casing move into oil-producing areas of the southwest from pipe mills in the central east and it is no accident that the bulk of it moves from waterside pipe mills by barge. It is because the barge movement is cheaper than any other way."

Mr. Smucker also emphasized his belief that—while railroad service should be as good as the nature of railroad operation permits—it is not necessary for railroads to match directly the service characteristics of the truck, if railroad charges are right. He went on to say:

"Tremendous tonnages are moving against us at rates substantially higher than our own cost plus reasonable profit. What we need to do is to begin real research into our own costs, the actual costs of our competitors and of the incidental costs of our shippers and consignees on particular types of heavy volume commodities. When we have these facts, we will be able to find ways to publish rates which will make it cheaper for these shippers and consignees to use our service at substantial profit to ourselves. We may encounter difficulty in getting some of these rates into effect, but it won't be any more difficult to put a rate into effect that will move the traffic than one which falls somewhat short of moving. We must, in rate-making, consider all factors which shippers and consignees have to add to quoted rates to get their full cost by the various means of transportation open to them.

"Railroad unit costs have been brought down to an amazing extent by physical research. It is my belief that railroads would now all be in the hands of the federal government had it not been for this physical research and implementation of its results through tremendous investments in improved equipment and facilities. It is also my opinion that if comparative cost research is not to be the basis for a competitive pricing structure, then we will have wasted everything we have done so far; and the only salvation of the railroad industry will be government subsidy and ultimately government operation."

WALTER A. RENZ, whose appointment as secretary of the American Railway Car Institute was announced in *Railway Age*, October 25, page 9.

WHAT RAILROADS CAN DO TO HELP THEMSELVES

Two modern trends have favored motor transportation, R. C. Waehner, general manager of the distribution division of Lever Brothers Company, told a recent Chicago conference on materials handling and transportation.

One is faster turnover of stock by distributors and chains, which implies smaller and more frequent re-orders. The other is palletized delivery to truck tailgate, with all handling beyond that point at the expense of the motor carrier, whereas "palletized delivery to rail cars generally requires removal from pallet and placement at expense of industry."

***New Freight Cars*—Mr. Waehner felt that the bulk of rolling stock prevents modern material handling beyond car doors. "The speed with which railroads provide equipment with wider-door, compartmentized sections and damage-free loading devices will directly affect their carloadings if they take advantage of the unlimited tonnage capacity, and where practical, provide higher minimums with corresponding lower rates."**

***Transit Rates*—Another trend toward specialized production in decentralized plants could favor railroads, if they would permit greater transit privileges for development of distribution centers, in Mr. Waehner's opinion. Too often, he said, these privileges are discouraged by unfavorable restrictions and high transit charges.**

"Not all these ills can be charged to railway management," he conceded. "Outmoded and unrealistic rules and regulations have taken a heavy toll on railroad volume. It can be overcome by unrelenting prosecution by shipper and carrier before regulatory agencies for their removal to permit all carriers the freedom of decision enjoyed by industrial management."

***Importance of Precision*—Turning to the experience of Lever Brothers, Mr. Waehner explained the role of precision rail transportation in helping refine the science of supplying manufacturing plants. Close collaboration between Lever Brothers' traffic manager and transportation officers has resulted in maintenance of rigorous schedules, i.e., consistency in elapsed time of transportation.**

"A perfect example of such stopwatch scheduling exists between our company and our can suppliers. Cans are loaded in railroad cars and (from receiving platform) are moved by conveyor directly to production line. Prior to inception of this method, it was necessary to store cans with subsequent rehandling, incurring costly labor to manually feed into production lines. In addition rehandling caused substantial damage. Countless thousands of dollars were saved by close collaboration between supplier, transportation carrier and the processor."

Equipment & Supplies

FREIGHT CARS

The **Ford Motor Company** has ordered 200 70-ton gondola cars from the Thrall Car Manufacturing Company, for use at the motor company's River Rouge, Mich., plant.

The **Seaboard Air Line** has ordered 1,000 freight cars at a cost of $6,680,000. ACF Industries will build 500 50-ton 50-ft. box cars; Pullman-Standard Car Manufacturing Company 400 40-ft 50-ton box cars; and Bethlehem Steel Company, 100 70-ton phosphate cars. Deliveries are scheduled to begin in the first quarter of 1955.

Rates & Fares

Intrastate Rates

The Interstate Commerce Commission has issued reports finding that unjust discrimination against interstate commerce has resulted from intrastate commutation fares in northern New Jersey and intrastate freight rates in North Carolina.

The New Jersey case (No. 31474) involves commutation fares of the Pennsylvania, Erie, Lehigh Valley and New Jersey & New York. There the commission withheld entry of an order, but said it would issue one requiring that the intrastate fares be brought into line with the interstate commutation rates on the same lines, unless permission to make such adjustments was granted by the New Jersey Board of Public Utility Commissioners.

The North Carolina case (No. 31479) involves the "ex parte" increases of recent years. There the commission overrode the North Carolina Utilities Commission and ordered

that the intrastate rates be brought into line with the interstate adjustment.

Commissioner Freas dissented in both cases.

New Postal Regulations

The Post Office Department has issued a new booklet designed to simplify and modernize regulations for all users of domestic and international mails. The booklet includes revisions of metered mail regulations, a condensation of international parcel post rates and liberalization of packaging requirements. The booklet covers chapters 1 and 2 of the new postal manual and is available at 65 cents per copy from the Superintendent of Documents, Government Printing Office, Washington, D. C.

Public Relations

New Haven to Re-establish Its Employee Magazine

The New Haven is re-establishing its employee magazine, Along the Line, and George P. McCallum, formerly with the Maine Central, has joined the public relations staff as its editor (*Railway Age*, November 8, page 39). First issue of the proposed monthly magazine is planned for January 1955.

New Facilities

New York Central.—Preliminary work has begun on rehabilitation of this road's mail terminal at Buffalo, N.Y. The project, to cost approximately $160,000, will incorporate conveyor belt equipment moved from the NYC Front Street mail terminal at Cleveland after the opening there of a new $8,000,000 mail terminal. A total of 800 ft of conveyor beltage will be used in the Buffalo facility. Construction work will be suspended during the Christmas rush period and resumed after the seasonal rush is over to make the new facility ready for full use next spring.

Organizations

ASME Annual Meeting

The American Society o Mechanical Engineers has chosen the "Influence of Science and Engineering on Modern Civilization" as the keynote for its annual meeting, to be held in New York November 28-December 3. Headquarters will be the Hotel Statler.

New York State Senator Thomas C. Desmond, will present the Roy V. Wright Lecture at 5 p.m. November 30. J. R. Dunning, dean of engineering, Columbia University, will be the speaker at the annual banquet at 7 p.m. December 1.

The program, in part, follows:

MONDAY, NOVEMBER 29

9:30 a.m.

Lubrication (I)—Railroad (I)

Load Capacity and Time Relations for Squeeze Films, by F. R. Archibald, Arthur D. Little, Inc.

Preliminary Investigation of Minimum Oil-Feed Rates for Fluid-Film Conditions in Journal Bearings, by Dudley D. Fuller, Columbia-University, and Bano Starrizicht, General Electric company.

Bearing-Material Evaluation for Railroad Use, by C. M. Robinson, Franklin Institute Laboratories.

8 p.m.

Junior—Education (III)—Management (III)

Panel: Training the Engineer—Whose Job Is It? Moderator: Robert Nelsen, General Electric Company; panel members: Education—David L. Arm, University of Delaware; Industry—D. F. Pratt, Cincinnati Milling Machine Company.

TUESDAY, NOVEMBER 30

9:30 a.m.

Fuels (IV)—Gas Turbine Power (II)—Railroad (II)

Heat Processing Combustible Materials by High Temperature Gas Generation and by Direct Flame Impingement.

Flame-Stabilized Oxy-Fuel Burners.

12:15 p.m.

Fuels Luncheon

Speaker: Daniel P. Barnard, Deputy Assistant Secretary of Defense for Research and Development. Subject: Evolving Patterns in Fuels and Energy.

2:30 p.m.

Oil and Gas Power (II)

General Technical Committee Meeting on Turbocharging of Two-Cycle Internal Combustion Engines.

Panel members: L. Carletti, Brown-Boveri Corporation; C. A. Chamberlain, Clark Brothers; R. F. Miaskiewicz, Elliott Company; Rudolph Birmann, De-Laval Steam Turbine Company; and Nelson Reed, Cooper-Bessemer Corporation.

Gas Turbine Power (III)

Recent Progress in Treatment of Residual Fuels for Gas Turbines.

A 5,000 Kw Railway-Mounted Gas-Turbine Power Plant.

WEDNESDAY, DECEMBER 1

9:30 a.m.

Gas Turbine Power (IV)—Fuels (V)

Operating Experience with Units for Power Generation—Evaluation of Corrosion Resistance of Gas-Turbine Blade Materials, and Influence of Some Chemical and Physical Factors on Formation of Deposits from Residual Fuels.

2:30 p.m.

Gas Turbine Power (V)

Operating Experience on General Electric Gas Turbines—Development of the First Gas-Turbine Mechanical-Drive Locomotive.

Railroad (III)—Fuels (VI)

N&W Coal-Fired Steam-Turbine-Electric Locomotive (Design and Performance).

THURSDAY, DECEMBER 2

9:30 a.m.

Railroad (IV)

Free-Piston Gas-Turbine Prime Movers—A Review of Basic Principles, by A. J. Ehrat, Baldwin-Lima-Hamilton Corporation.

Possibilities of Burning Cheaper Fuels in Diesel Locomotive Engines.

Gas Turbine Power (VI)

Structural Design Problems in Gas-Turbines.

Gas-Turbine Bucket Operating Experience and Bucket and Wheel-Design Method.

2:30 p.m.

Railroad (V)

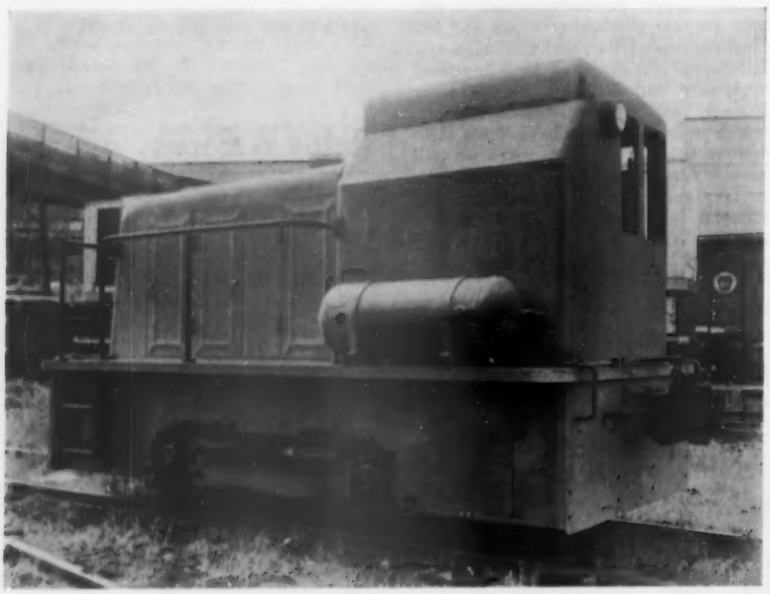
Realistic Goals for Railway Passenger-Car Design, by T. C. Gray, Pullman-Standard Car Manufacturing Company.

Heavy-Capacity Freight Cars.

American U. to Hold Seventh Traffic Institute

The Seventh Institute of Industrial Transportation and Traffic Management of the American University, Washington, D.C., will be held from January 11 through January 28, 1955. As in previous years, the institute will be directed by L. M. Homberger, professor of transportation at the university.

At the recent annual conference of the **American Council of Railroad Women** the following were elected as officers: President, H. Luiese Jones, interior decorator, Seaboard Air Lines, Norfolk, Va.; vice-presidents, Mildred L. Drechsler, special representative, Baltimore & Ohio, Baltimore; and Mary Anita Roche, passenger representative, Chicago, Burlington & Quincy, Kansas City, Mo.; secretary



LOCOMOTIVE WITH A BLIND SIDE! This General Electric diesel-electric locomotive, with no windows on one side of its cab, is now in the service of the Allied Chemical & Dye Corp., in its Semet-Solvay division's Ashland, Ky., by-product coke plant. The windows were omitted to protect the operator from the heat of incandescent coke. The 25-ton, 150-hp locomotive is equipped with an extra large compressor, extra air reservoir capacity, and air dumping equipment for a coke quenching car.

(re-elected), Amy Mitchell, assistant secretary, Atlanta & West Point, Atlanta; and treasurer (re-elected) Helen Creagan, secretary to president, Chicago & Eastern Illinois, Chicago.

Robert H. Jamison has been elected editor and manager of the Railway Carmen's Journal, official publication of the **Brotherhood of Railway Carmen of America.** Mr. Jamison, who also was elected director of trade education, succeeds, in both posts, Dallas B. Huggins, who has retired.

Maj. Gen. George Craig Stewart has been appointed general manager of the **National Safety Council,** a new position created to broaden top-level administration of the nonprofit accident-prevention organization. Gen. Stewart, who will assume his new duties this month after his retirement from the Army becomes effective, is presently serving as director of the Office of Military Assistance in the Office of Secretary of Defense.

The **American Association of Traveling Passenger Agents** has elected the following officers: President—C. W. Hancock, general agent, C&NW, Winston-Salem, N.C.; vice-president—W. D. Fernald, general agent, D&RGW, Kansas City; and secretary-treasurer—C. A. Melin, retired general eastern passenger agent, Nickel Plate, Cleveland.

Eugene M. Hart, supervisor of employment and personnel for the Jersey Central Lines, was elected president of the **United Association of Railroad Veterans** at the group's recent 25th annual convention in Rochester, N.Y.

Irvin S. Lippe, director of public relations for the **Brotherhood of Railroad Trainmen,** has assumed also the duties and title of editor of Trainman News, the union's official weekly publication. The union's educational and research bureau is to be transferred from Cleveland to Washington, D.C., and under the direction of Byrl A. Whitney, editor of Trainman News for the past three years, will be extended and expanded.

New officers of the **Chicago Railroad Superintendent's Association,** elected October 19, include C. K. Strader, superintendent, Baltimore & Ohio Chicago Terminal, president; and W. E. Foran, terminal superintendent, Chesapeake & Ohio, and R. S. Hobson, superintendent, Elgin, Joliet & Eastern, vice-presidents. Retiring president is D. E. Ferner, superintendent of transportation, Chicago South Shore & South Bend.

The **Traffic Club of Minneapolis** will hold its 39th annual dinner in the Hotel Nicollet December 2. Sydney Ferguson, chairman of the board of the Mead Corporation, New York, will be the principal speaker.

A. E. DeMattei, superintendent of communications, Southern Pacific, will be guest speaker at the meeting of the **Pacific Railway Club** in the Mart Club, San Francisco, November 18.

Supply Trade

Passenger Belt-Conveyor Firm is Incorporated

A new company, jointly owned by the Goodyear Tire & Rubber Co. and the Stephens-Adamson Manufacturing Company, has been incorporated to engineer, develop, sell and install passenger belt-conveyor systems. The new firm, Passenger Belt Conveyors, Inc. has submitted a bid to install such a system in the New York City subway system between Grand Central Terminal and Times Square. Similar installations in other cities are said to be under consideration.

C. Parke Anderson has been appointed sales manager of the **Thomas Truck & Caster Co.'s** newly acquired division, the **Lanham Skid Company.**

John L. Baldridge has been appointed branch manager of the Southwestern district of **Lamson Mobilift Corporation,** with headquarters in Dallas.

John Schippers has been appointed manager of the Chicago branch office of the **Colson Corporation.**

John J. Sayles has been appointed field service engineer in the Cleveland area of the Pittsburgh division of **A. M. Byers Company,** at Cleveland.

CHARLES T. ZAORAL, whose election as president of the New York Air Brake Company, to succeed Bernard Peyton, was announced in *Railway Age*, October 25, page 43. Mr. Peyton has become chairman of the board. Before joining New York Air Brake in 1952, Mr. Zaoral was general manager of the International division of Bendix Aviation Corporation for approximately eight years.

MARC BENDICK, who has been elected president of the Barnaby Manufacturing Company. Mr. Bendick recently headed Bridgeport Industries, and was president of Stratford Aviation Corporation.

T. J. Ault has been elected president and general manager of the Long Manufacturing division of **Borg-Warner Corporation. R. Rodger Dryden,** formerly president and general manager of Long, becomes chairman of the division to succeed **J. Lester Dryden,** who is retiring.

Berry division of **Oliver Iron & Steel Corp.** has announced the opening of new sales and engineering offices in Chicago, and the appointment of **W. L. Denniston** as Chicago district sales engineer. Mr. Denniston, formerly in the firm's home office in Pittsburgh, will have headquarters in the new offices, at 4227 West 43rd street.

John M. Tuthill, formerly assistant general manager of sales for **Youngstown Sheet & Tube Co.,** has been appointed general manager of sales. Mr. Tuthill, who was in the firm's Chicago office, has transferred to the main office in Youngstown, Ohio. **John P. DeHetre,** who was appointed an assistant general manager of sales last June, with office in Youngstown, has been transferred to Chicago to succeed Mr. Tuthill. **P. G. Boyd,** formerly Chicago district sales manager, has been promoted to the newly created position of Western manager of sales. **C. Hix Jones,** Detroit district sales manager, succeeds Mr. Boyd at Chicago, and **David H. Goodfellow,** assistant Detroit district sales manager, succeeds Mr. Jones.

Charles G. Hugus, Jr., eastern district sales manager of **L. B. Foster Company,** has been elected assistant vice-president. He will continue to direct eastern district sales at New York.

G Allen Lovell, sales manager of manufacturerers' products, **United States Rubber Company,** has been

(Continued on page 16)

Supply Trade

(Continued from page 13)

elected assistant general manager of the mechanical goods division at New York.

Lawrence E. MacDonald has been appointed general sales manager for **Bucyrus-Erie Company.** He was formerly sales manager, excavator distributors.

Abandonments

Authorization

BESSEMER & LAKE ERIE.—To abandon both its "Old Main Line," extending 10.5 miles between Filer, Pa., and Coolspring, and its Mercer Branch, running 0.8 mile between Mercer and the "Old Main Line" at Mercer Junction.

LEHIGH VALLEY.—To abandon the 4-mile end portion of its main line in Buffalo, N.Y., including passenger station, freighthouse and terminal and other facilities, to provide right-of-way for the New York State Thruway. New passenger and freight facilities will be constructed by the road east of Dingens street.

PENNSYLVANIA.—To abandon operation of a 15-mile branch of the Western New York & Pennsylvania between Kinzua, Pa., and West Line. The branch itself is also authorized to be abandoned.

PENNSYLVANIA.—To abandon operation of a 3.1-mile segment of the Fort Washington branch leased from the Connecting Railway near Wyndmoor Station, Pa. The segment itself is to be abandoned by the Connecting.

People in the News

Senate Asked to O.K. Hall for ICC Position

President Eisenhower has submitted to the Senate his appointment of John A. Hall as director of locomotive inspection, Interstate Commerce Commission. Mr. Hall has been serving since October 5 on an interim appointment (*Railway Age*, October 11, page 11).

The appointment was submitted to the Senate November 8, the day on which that body resumed its sessions for the principal purpose of considering a resolution providing for censure of Senator McCarthy.

Figures of the Week

Freight Car Loadings

Loadings of revenue freight in the week ended November 6 totaled 695,097 cars, the Association of American Railroads announced on November 11. This was a decrease of 41,136 cars, or 5.6%, compared with the previous week; a decrease of 52,771 cars, or 7.1%, compared with the corresponding week last year; and a decrease of 134,198 cars, or 16.2%, compared with the equivalent 1952 week.

Loadings of revenue freight for the week ended October 30 totaled 736,233 cars; the summary for that week, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, October 30

District	1954	1953	1952
Eastern	118,212	128,456	144,616
Allegheny	129,896	154,218	168,148
Pocahontas	53,834	54,595	55,418
Southern	128,754	127,032	132,533
Northwestern	108,948	122,450	147,896
Central Western	137,871	133,132	145,316
Southwestern	58,718	60,960	68,189
Total Western Districts	305,537	316,542	361,401
Total All Roads	736,233	780,843	862,116
Commodities:			
Grain and Grain products	60,055	56,865	57,409
Livestock	14,328	15,166	15,565
Coal	129,687	129,995	137,404
Coke	9,055	12,663	15,091
Forest Products	46,732	46,191	48,683
Ore	43,213	63,590	92,700
Merchandise l.c.l.	65,928	71,202	74,865
Miscellaneous	367,235	385,171	420,399
October 30	736,233	780,843	862,116
October 23	746,007	804,413	760,773
October 16	721,402	822,582	838,408
October 9	703,193	804,066	842,797
October 2	721,883	812,534	851,920
Cumulative total 44 weeks	28,659,980	33,090,868	32,173,910

In Canada.—Carloadings for the seven-day period ended October 21 totaled 77,379 cars, compared with 71,503 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
October 21, 1954	77,379	26,370
October 21, 1953	84,290	31,338
Cumulative Totals:		
October 21, 1954	2,948,201	1,144,502
October 21, 1953	3,244,923	1,326,969

Financial

ICC Makes "Final" Report in Mopac Case

Making its eighth supplemental report in the Missouri Pacific reorganization case, the Interstate Commerce Commission has modified, in relatively minor respects, the revamp plan which it approved in its seventh supplemental report.

The latter, issued last July, generally approved the reorganization plan agreed upon by major interests. That plan will give present Mopac common stockholders a stake in the reorganized company. (*Railway Age*, August 9, page 14).

The principal modification now made relates to claims of holders of first-mortgage, 4% bonds of the Little Rock & Hot Springs Western. Under the plan approved last July, they would get a total of $1,244,592 of new Mopac first-mortgage, 4½% bonds. In petition for modification of that plan, the trustee for the LR&HSW bonds contended for an allocation of Mopac bonds in the amount of $1,607,400.

The commission took the position that it had made an "equitable determination" of the matter in the July report, but nevertheless modified the plan to allow for any additional allocation of Mopac bonds which the court might make to the LR&HSW holders. This was done so such court action "will not require a return of the plan to us."

All other petitions for modification of the previously-approved plan were denied.

Jersey Central Lines.—*Sells Land.*—The Jersey Central has agreed to sell to D. C. Evans, industrial developer of Hillside, N.J., 20 acres of land on Division street in Elizabeth, N.J., and has given Mr. Evans an option to acquire an additional 90 acres in the area. Mr. Evans will immediately begin construction of 100,000 sq ft of industrial building on the 20-acre plot. It is expected he will exercise his option o.. the remaining acreage as additional land is needed for development.

Missouri-Kansas-Texas. — *Recapitalization.*—A revised plan of modification of this road's capital structure has been approved by the directors (*Railway Age*, October 4, page 63). Under terms of the revised plan, each share of outstanding 7% preferred stock, including deferred dividends, would be exchanged for $140 of new 5% income bonds and one share of new $60-par class A redemptive stock. Each share of outstanding common stock would be exchanged for one share of new $10 par common stock.

Pennsylvania. — *Merger of Subsidiaries.*—This road has applied to the Interstate Commerce Commission for approval of the merger of six subsidiaries into the Pennsylvania's Penndel Company in order to "simplify the corporate structure of the Pennsylvania Railroad by decreasing the number of separate corporations" in its system. The roads to be merged are the Western New York & Pennsylvania, Wheeling & Eastern, Wheeling Coal of West Virginia, Wheeling Coal of Pennsylvania, New Cumberland & Pittsburgh and Detroit Union Depot & Station.

Securities

Application

KANSAS CITY SOUTHERN.—To issue $50,000,000 of first mortgage, 30-year bonds, series C, to finance (with other funds) redemption of $37,889,000 of series A bonds which bear interest at 4%, and $13,154,000 of series B bonds which bear interest at 3⅝%. The former, due October 1,1975, would be called at

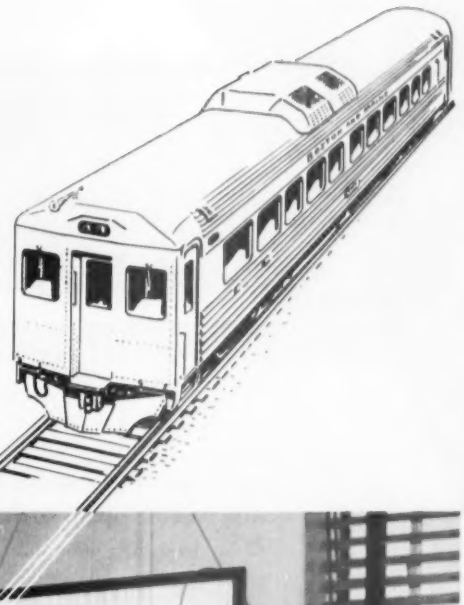
(Continued on page 74)

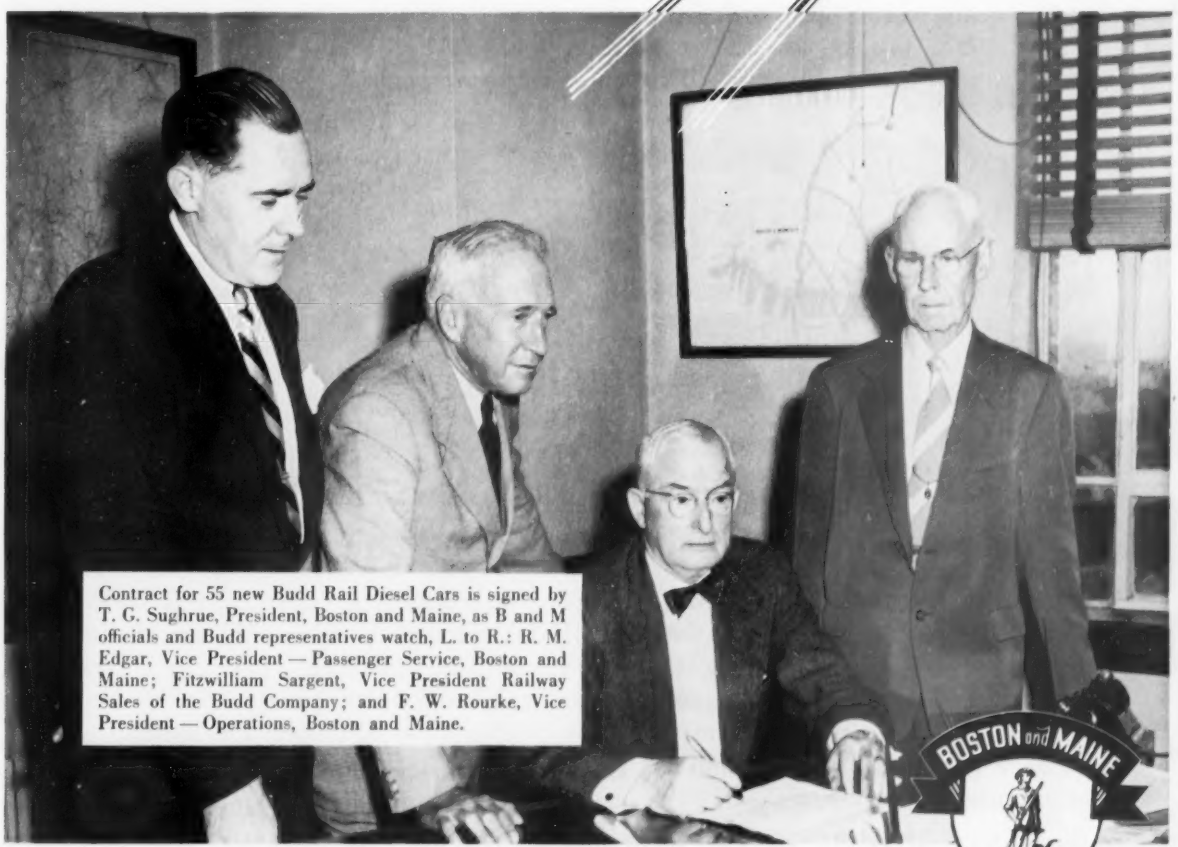
B and M places largest single order ever for Budd Rail Diesel Cars

This coming year Boston and Maine will take delivery on the largest single order of Budd Rail Diesel Cars ever placed. The new units, called "Highliners" on the B and M, will offer added convenience and comfort to B and M's passengers, as well as help meet the problem of rising passenger costs.

During the past few years Boston and Maine has conducted an aggressive program of improvements and modernization of plant and equipment.

Arrival of the Budd Highliners will mark complete dieselization of the Railroad and represent another major advance in B and M's program of building a stronger railroad for Northern New England.





Contract for 55 new Budd Rail Diesel Cars is signed by T. G. Sughrue, President, Boston and Maine, as B and M officials and Budd representatives watch, L. to R.: R. M. Edgar, Vice President — Passenger Service, Boston and Maine; Fitzwilliam Sargent, Vice President Railway Sales of the Budd Company; and F. W. Rourke, Vice President — Operations, Boston and Maine.

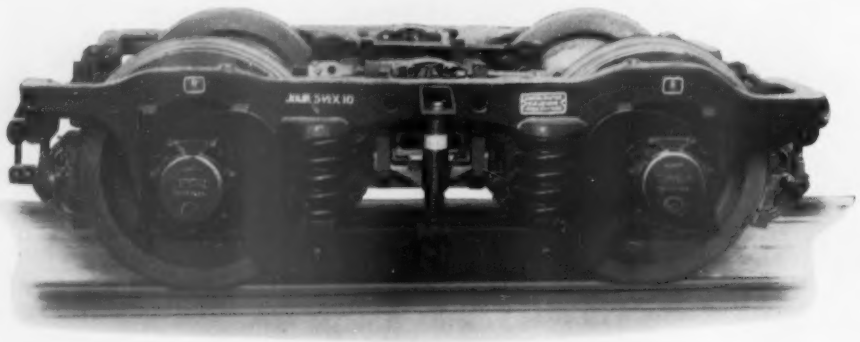
BOSTON and MAINE RAILROAD

BOSTON and MAINE RAILROAD
"MINUTE MAN SERVICE"

THE NEW ECONOMICAL WAY

to Replace Heavy, Worn-Out Baggage and Express Cars in Passenger Train Operation

Light weight head-end cars of modern design, such as the storage-mail express car illustrated above, equipped with COMMONWEALTH latest type BX Trucks, are the economical solution to the problem of replacing old, heavy weight equipment.



For operation at passenger train speeds, head-end commodity cars—express refrigerator cars—mechanically refrigerated cars—trailer carrying flat cars—all should be equipped with COMMONWEALTH BX type trucks to assure safe, smooth performance, to greatly reduce damage to lading and car, and for most economical operation.

When you consider replacing worn-out, heavy weight head-end cars, COMMONWEALTH BX type trucks offer outstanding advantages in economy and performance. Design includes equalization, swing-motion and one-piece cast steel truck frame with pedestals cast integral to insure perfect alignment of wheels and axles.

COMMONWEALTH BX Trucks are accepted in passenger train interchange without exception. Write today for full information!

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. EDDYSTONE, PA.

Ship by Rail
Travel by Rail

Amcreco
Lowry Process
Creosoted Products

Bridge Timbers
Adzed and Bored Cross Ties
Poles
Plank

●

Pressure treated for
Strength that lasts!

●

with AMCRECO Creosoted Products

Long service life with minimum maintenance—that's how Amcreco quality products reduce maintenance-of-way costs to the lowest possible level. Amcreco cross ties, bridge timbers, poles and plank last longer with greater strength because they are pressure treated in creosote by experienced Amcreco methods.

Start now and lower your maintenance-of-way costs by taking advantage of our nearly half a century of wood treating experience. Call your nearby Amcreco sales office for positive information on maintenance cost reduction.

AMERICAN CREOSOTING COMPANY

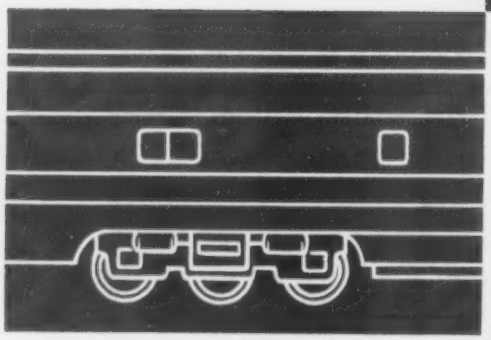
COLONIAL CREOSOTING COMPANY

AMCRECO

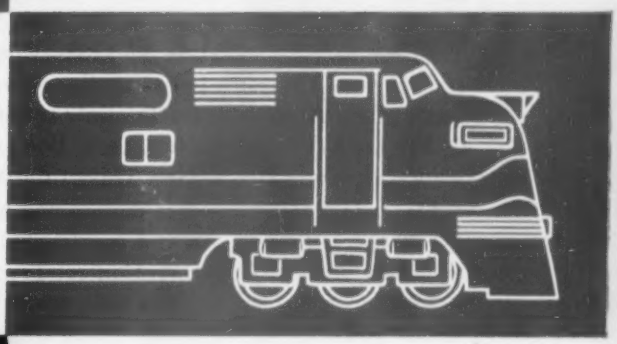
GEORGIA CREOSOTING COMPANY

GENERAL SALES OFFICE—CHICAGO, ILLINOIS
18 FIELD SALES OFFICES TO SERVE YOU

SAVES 2/3 OF ENGINE IDLING FUEL COSTS!



Keeps Diesels
Road-Ready,
Easy-Starting!



the new VAPOR WATCHMAN HEATER is fully automatic

A mechanical "baby-sitter" for Diesels . . . that's the new Vapor Watchman. There's nothing for the train crew to do—nothing to turn on or off. The Watchman stands guard over coolant temperatures *all* the time . . . in *all* weather.

Idle switchers, line locomotives, and multiple-units stay safe, warm, fully expanded, and ready for service at but a fraction of "idling" costs. And, on light-load pulls, proper operating temperature is always maintained for highest Diesel efficiency.

Dependable "Watchman" automatic Diesel protection is one of today's best investments for railroads—another timely Vapor development that helps turn *revenue* into profits.

The Watchman is simple, compact, efficient—an automatic Vapor Hot Water Heater hooked into the engine cooling system. It burns Diesel fuel . . . operates from locomotive storage batteries or any 110-volt track outlet . . . comes-on only when coolant drops to the selected activating temperature. Circulates approximately 10 g.p.m. Available with warning bell which rings if operation is interrupted.

Ask for new Bulletin No. 588, "*A Baby Sitter for Diesels.*" It gives Watchman Heater specifications and performance data.

VAPOR HEATING CORPORATION 80 E. JACKSON BLVD., CHICAGO 4, ILLINOIS

In Canada: Vapor Car Heating Co. of Canada, Ltd., 65 Dalhousie St., Montreal 3

NEW YORK • ST. PAUL • DENVER • WASHINGTON • PHILADELPHIA • ATLANTA • SAN FRANCISCO • HOUSTON • RICHMOND • LOS ANGELES • ST. LOUIS

It began as an experiment—but paid off for everyone concerned. That's why

"Trailiner" traffic increases 3200%

Anyone who doubts the future of trailers on flatcars should take a long look at the New Haven's Trailiner service. Starting in 1938—when 1,506 trailers were shipped—it has mushroomed to the point where seven separate Trailiner trains carried 50,255 trailers between New York, Boston, Providence, Springfield and New Haven during 1953.

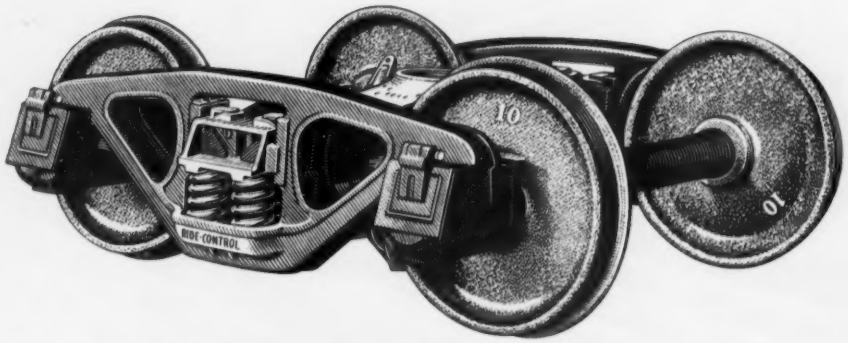
Dependable schedules are maintained by a fleet of 360 specially designed and constructed flatcars —all mounted on ASF Ride-Control Trucks. Result? Trailer and lading get a safe, smooth ride at almost passenger-train speeds. Using Ride-Control Trucks, experience has shown that if a trailer load rides safely to the New Haven yards, it rides safely on the flatcars.

And everybody benefits. The New Haven builds additional revenue. The truckers enjoy relief from highway hazards . . . they get balanced distribution of empties at lowest possible costs . . . and they've doubled the number of trailers used per tractor.

Today, Trailiner service is no longer an innovation. It's an outstanding example of progress . . . with two great transportation methods working together.

Trailiner flatcars receive greater utilization than practically any other freight cars in revenue service. The fleet of Trailiner cars will soon be enlarged with delivery of 100 new cars now on order. These new cars will also run on ASF Ride-Control Trucks—modified for use with roller bearings.

on the New Haven's "Iron Highway"



The "Trailiner" rides on

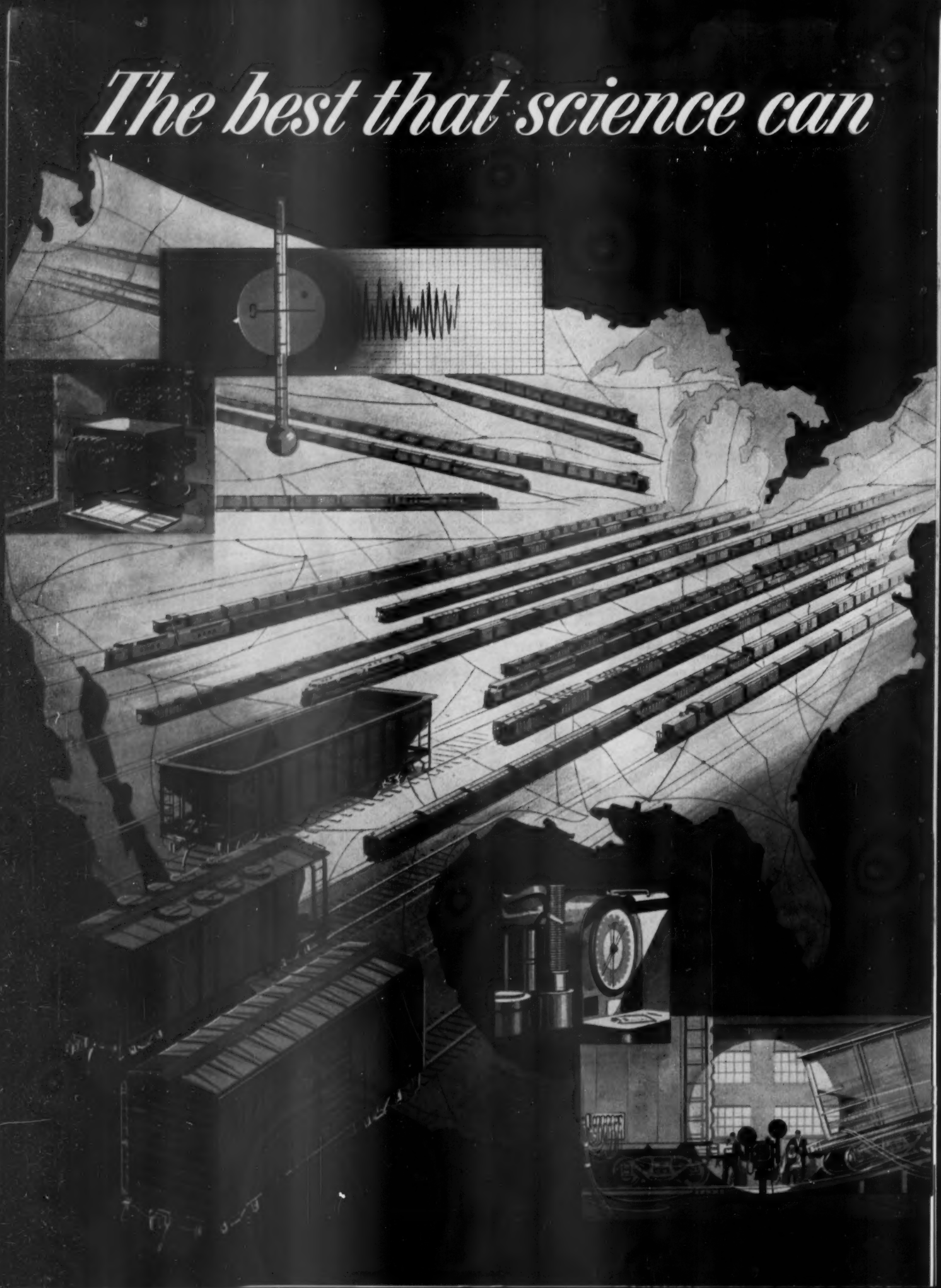
ASF

ride-control® trucks

AMERICAN STEEL FOUNDRIES

410 N. Michigan Avenue, Chicago 11, Illinois

Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec


The best that science can

offer is none too good

for the

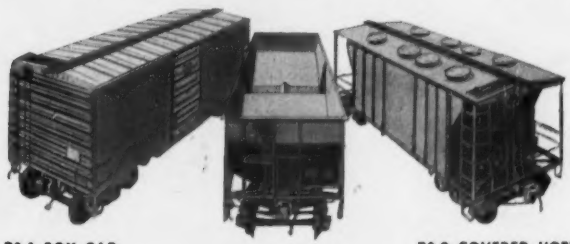
A typical box car (according to the A. A. R.) moves, in one year, on 39 different railroads, including two or more trips on 24 roads.

Therefore freight cars *should* be designed and built to operate efficiently and economically, wherever they are sent to earn revenue.

That is why Pullman-Standard uses every tested industrial science in designing and building the PS-1 Box Car, the PS-2 Covered Hopper Car, and the PS-3 Hopper Car . . . why new techniques of electronic analysis and computation are followed . . . why new methods of welding and metal testing are used . . . why new processes of precision construction are applied.

By adding new industrial sciences to the old, by combining them with the skills of experienced manpower, by taking full advantage of improved materials and specialized tools, quality cars are built at lower cost—cars to best serve the railroads, in earning greater revenue, anywhere on the Great American Railway System as well as on the lines of the purchasing road.

Built to serve best on the
GREAT AMERICAN RAILWAY SYSTEM



PS-1 BOX CAR

PS-3 HOPPER CAR

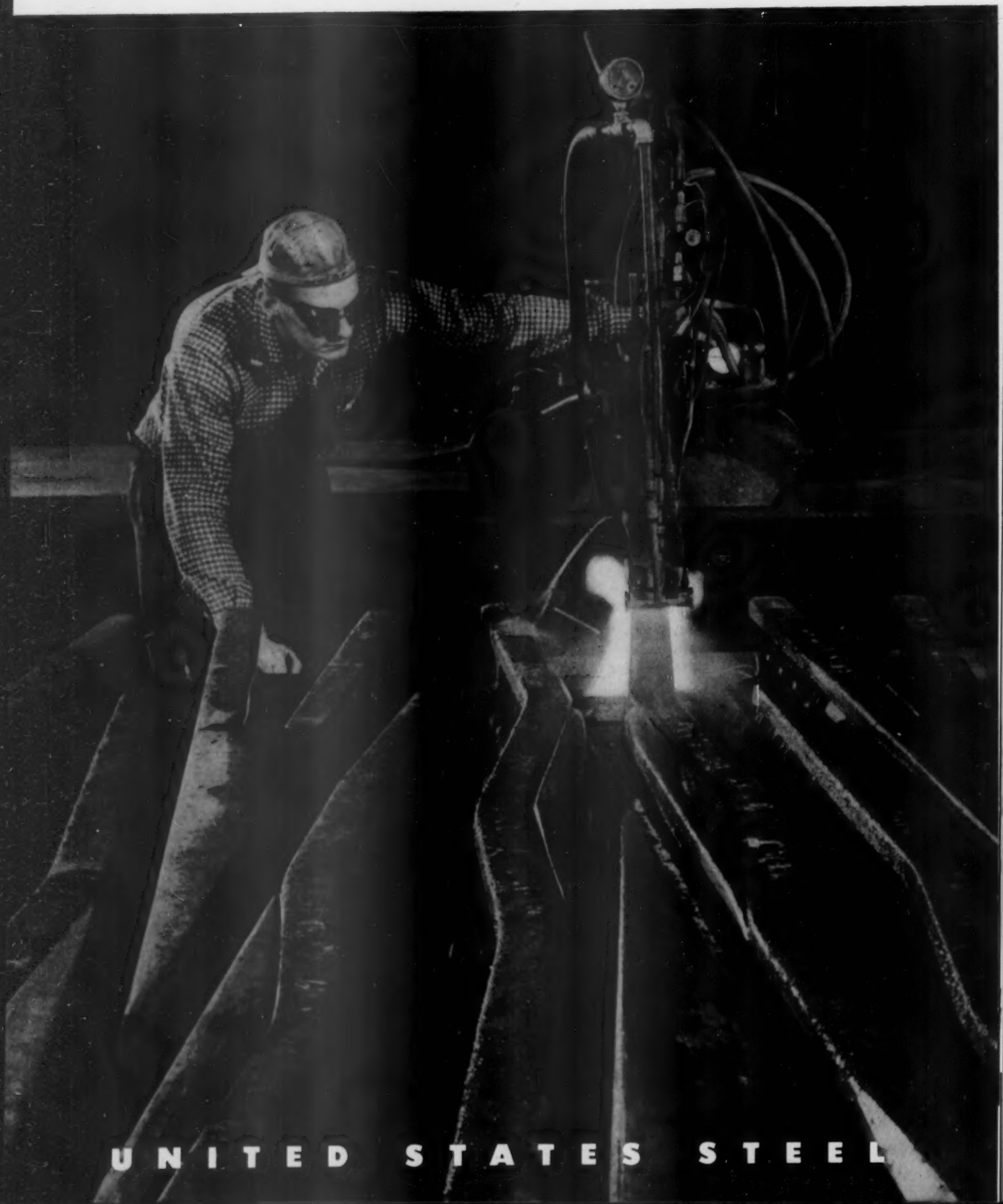
PS-2 COVERED HOPPER

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

PULLMAN-STANDARD

CAR MANUFACTURING COMPANY
SUBSIDIARY OF PULLMAN INCORPORATED
79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS
BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON

"We lengthen the life



# of special trackwork by end hardening"

SAYS *John Karas,*

U.S. STEEL HARDENER

● Rail joints at crossings and switches don't hold up long if the rail ends aren't hardened. Heavy freights and fast expresses pounding over them daily tend to batter the rail ends down, turning smooth joints into jolting "cups." Consequently, the damaged rail ends must be built up again and again—maintenance that costs railroads time and money. That's why John Karas' job is important.

End hardening of rails is carried out under rigid metallurgical control. Karas must set his torch at a predetermined height, adjust the flame to the correct temperature for heating to insure the proper depth of hardening, and travel it at a steady predetermined speed. Air quench must be applied at proper pressure. Finally, when the heating and quenching is finished, the rail ends meet the requirements of A.R.E.A. and possess a hardness of 331 to 401 Brinell. These rails, then, are *prepared in advance* for hard wear—capable of standing up under the endless stream of pounding wheels.

John Karas has 17 years of service with U. S. Steel—nine years on his present job as hardener. He's confident, expertly trained—working with modern equipment, turning out a product that's excellent in all respects. The quality of the job he does is further proof that *years of experience, plus painstaking manufacture, make USS Trackwork the finest you can buy.* For further information, write to United States Steel Corporation, 525 William Penn Place, Room 4551, Pittsburgh 30, Pa.

These railbound manganese steel frogs are destined for the New York, Chicago and St. Louis Railroad. John Karas is shown hardening the ends of rolled carbon steel rail arms.

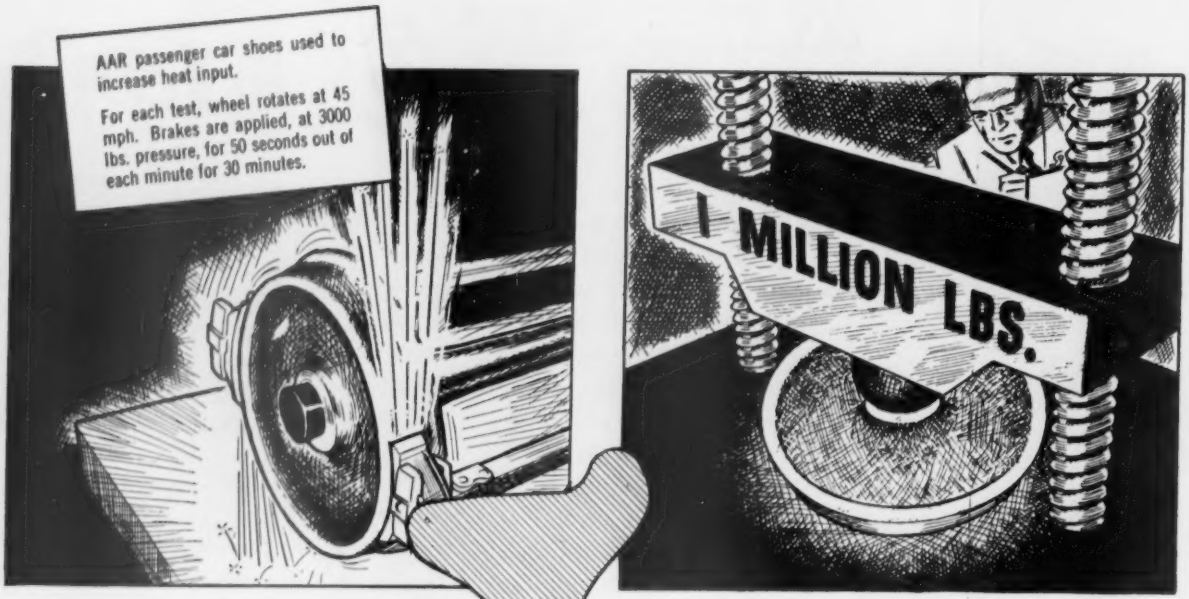
USS

TRACKWORK

UNITED STATES STEEL CORPORATION, PITTSBURGH · TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

because of major design improvements

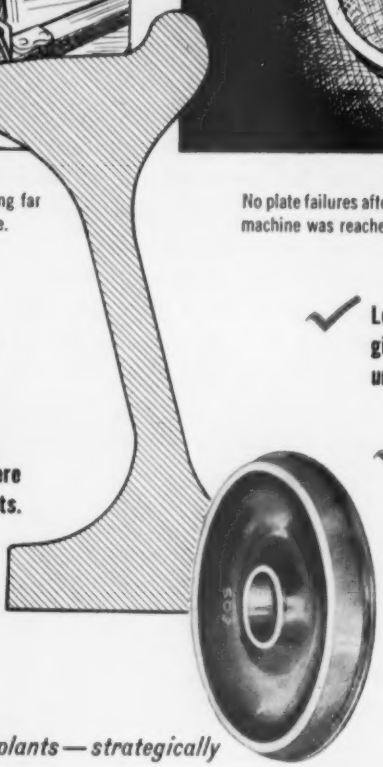
YOU CAN GET LONGER WHEN YOU SPECIFY



No thermal failures—after 10 drag tests representing far tougher conditions than ever found in freight service.

No plate failures after the capacity of the static plate testing machine was reached—1 million pounds on the back hub.

- ✓ No flange failure—after loading of over 600,000 pounds.
- ✓ No thermal cracks during unusually severe thermal and drag tests.
- ✓ No rim failures—after heavy impact tests.
- ✓ Long, sweeping fillets give stronger support under flange and rim.
- ✓ Heavier plate gives a greater factor of safety.
- ✓ No plate failure—with static load of 1,000,000 pounds.

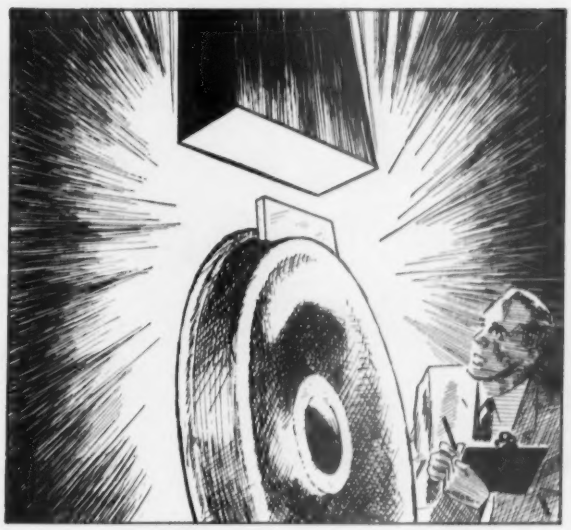


Eleven modern plants—strategically located for service: Tacoma

WEARING CAR WHEELS
THE GRIFFIN EQS

and the toughest tests prove it!

No flange failures—during test in which the flange was subjected to a static load of over 600,000 pounds.



No rim failures—after heavy impact tests. Multiple blows were directed at the same spot—1" from outer face of rim.

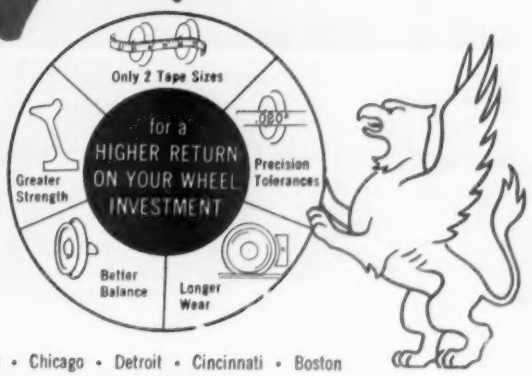
SPECIFY THE

GRIFFIN EQS ELECTRIC QUALITY STEEL

GRIFFIN WHEEL COMPANY

410 N. Michigan Avenue, Chicago 11

MEMBER



Los Angeles • Salt Lake City • Denver • St. Paul • Kansas City • Council Bluffs • Chicago • Detroit • Cincinnati • Boston

better with USS COR-TEN steel since 1934

COR-TEN steel construction prolongs life and reduces maintenance costs

by its superior ability to resist corrosion and withstand abuse

LIFE is hard for the gondola car. No other type of car has to transport such a diversity of heavy and bulky commodities. None is subjected to more severe and destructive service conditions.

For in addition to being constantly exposed to atmospheric corrosion, while carrying minerals of various kinds, or lumber, steel products or machinery, the gondola car also takes a beating every time it is loaded or unloaded.

That is why 24 domestic and 7 foreign railroads have turned to USS COR-TEN steel construction to keep down maintenance expense and to prolong the life of their gondolas. To date 23,000 COR-TEN steel gondolas have been built. More than 4000 of them have been in service from 10 to 16 years.

During that time, COR-TEN steel's ability to improve car performance has been amply demonstrated. These cars have stood up better than cars built of carbon steel. They have cost less for repairs.

Deterioration caused by atmospheric corrosion* has been greatly retarded because COR-TEN steel has 4 to 6 times the atmospheric corrosion resistance of carbon steel —2 to 3 times that of copper steel. And, because COR-TEN steel is 50% stronger than structural carbon steel, has 60% higher endurance limit, and offers greater resistance to distortion and denting, mechanical damage to these COR-TEN steel gondolas has been kept to a minimum.

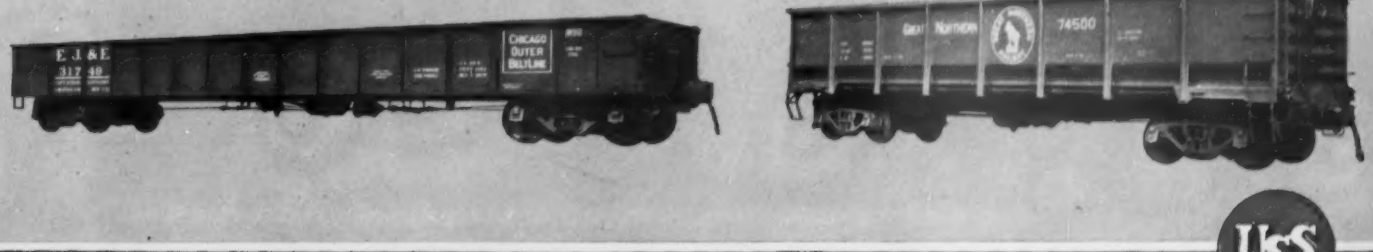
Typical of the railroads capitalizing on these cost-saving advantages of COR-TEN steel construction are the Denver & Rio Grande Western which bought its first lot of 50 COR-TEN steel gondolas in 1939 and now has 4800 in service . . . the Elgin, Joliet and Eastern which started with 200 in 1936 and at present owns 2,000 . . . the Great Northern which bought 500 in 1944 and has added 700 since . . . the Atchison, Topeka & Santa Fe with 500 COR-TEN-built gondolas in service.

These representative roads and others on the long list of users of gondola cars that have been built better with USS COR-TEN can tell you how this tough, strong, corrosion-resisting steel pays off for them. We will be glad to tell you who they are.

**A recent railroad study showed that corrosion is responsible for 58% of the cost of repairs to gondola cars.*

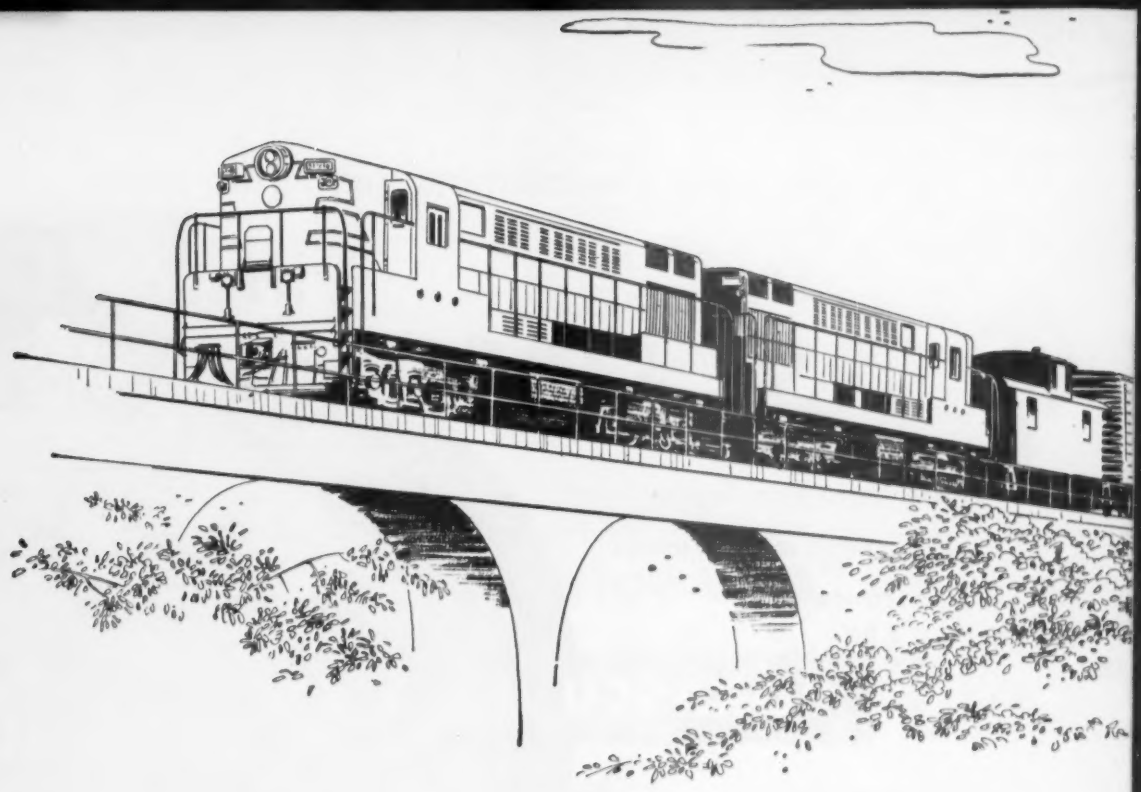
UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

4-T4M



USS

UNITED STATES STEEL



"No Perceptible Wear"

Reports on the solid aluminum main and connecting rod bearings in the Opposed-Piston Diesels in Fairbanks-Morse locomotives add up to a remarkable degree of trouble-free, long-lasting performance.

After five, six, seven years of performance in all kinds of service the reports read:

"No perceptible wear"
"Bearings re-installed"
"Bearings checked to new dimensions"

The rapid heat dissipation and elimination of hot spots obtained from solid aluminum coupled with the reduced bearing load inherent in the design of this engine are responsible for this remarkable service life.

This design feature is one of the many which make Fairbanks-Morse locomotives the soundest investment for any railroad. Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE

a name worth remembering when you want the best

DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT • ELECTRICAL MACHINERY
PUMPS • SCALES • WATER SERVICE EQUIPMENT • HAMMER MILLS • MAGNETOS

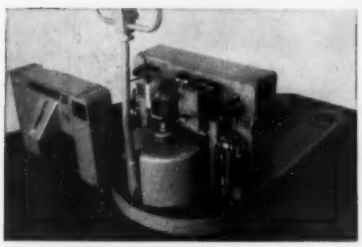
Make sure your maintenance man sees this!

Clark's POWRWORKER "26"*

The most "Serviceable" truck ever built!

POWRWORKER **"26" Pallet Truck**
4000 and 6000 lbs. capacity
Also available as platform or tilting fork stacker

Ask him to compare these ACCESSIBILITY features!



HYDRAULIC SYSTEM EXPOSED IN 2 MINUTES . . .

Remove 4 bolts and slip off the one-piece cover; the complete hydraulic sub-assembly is exposed. Hydraulic motor, pump, oil reservoir, valve assembly and self-aligning cylinders are immediately accessible and ample space is provided for quick inspection or removal.

POWER HEAD READY-TO-WORK-ON IN 2 MINUTES . . .

Split cover allows complete accessibility to the drive motor, brakes, resistor and control panel by merely removing 7 screws. Revolving head permits servicing any side of the power head without further dis-assembly. For major overhaul, the whole unit can be removed in 17 minutes.

CHANGE DRIVE TIRE IN 12 MINUTES . . .

Standard Press-on type demountable tire is furnished as original equipment. Raise the truck 12 inches and loosen spanner nut which releases the axle shaft and the wheel drops out. Split wheel rim with spreader inserts allow immediate tire dis-assembly and re-assembly.

***The POWRWORKER "26" is only 26 inches longer than the load . . . the shortest standard truck on the market!**

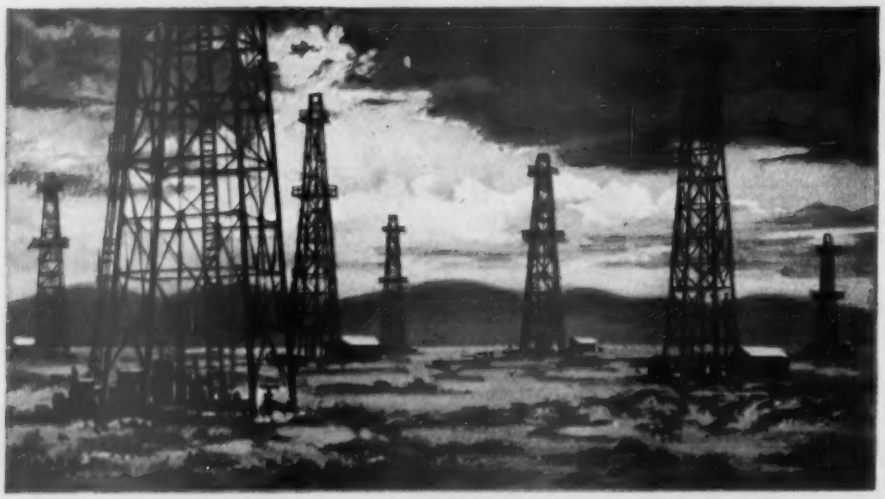
☐ Please send POWRWORKER literature.
☐ Have representative call

Name _____
Firm Name _____
Street _____
City _____ Zone ____ State _____

POWRWORKER SECTION
Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 24, Michigan

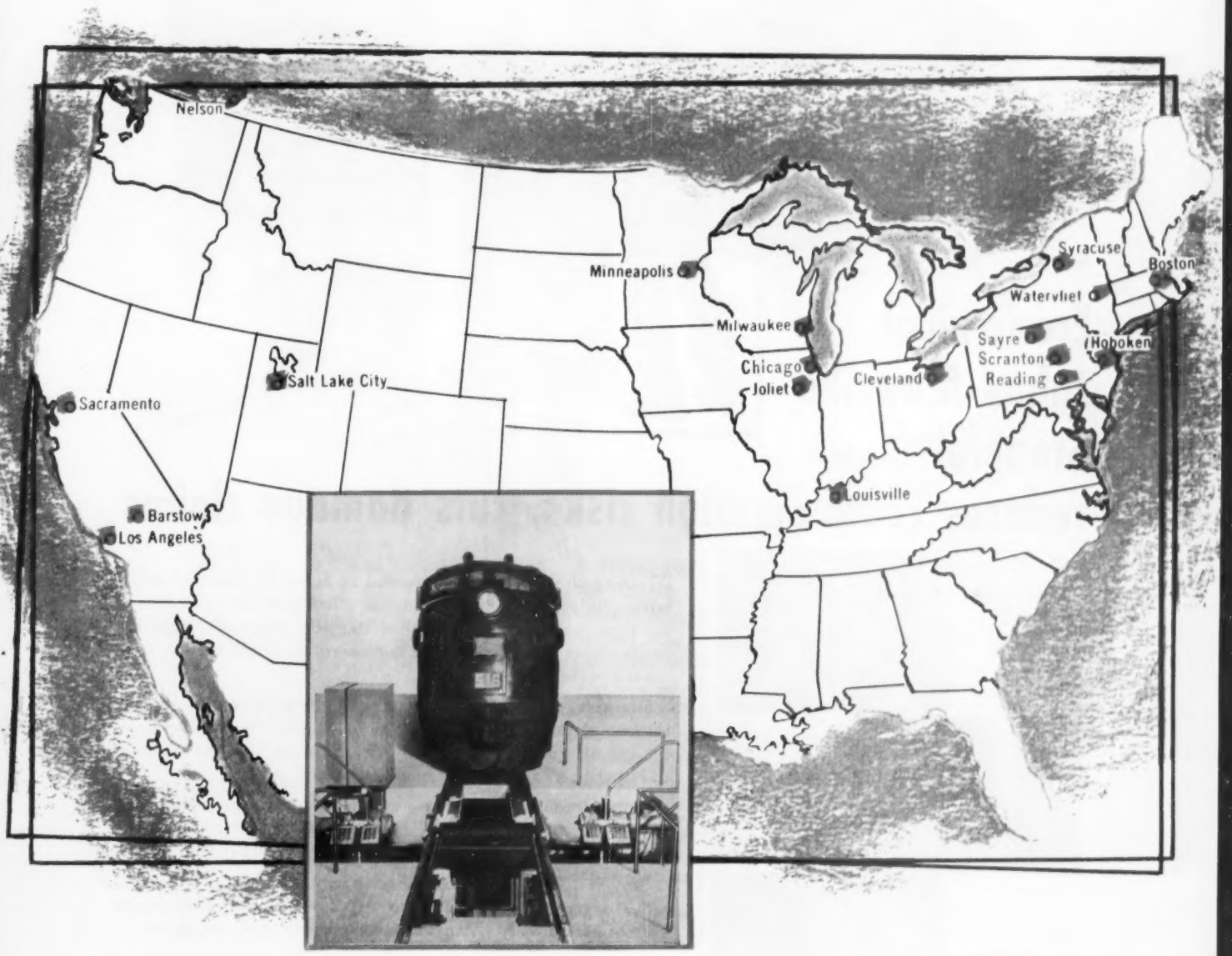
CLARK® EQUIPMENT

Not merely to sell; but to serve well . . . not only to make good products; but to make them still better . . .



MORE and MORE RAILROADS

making MORE and MORE Savings!



The list of railroads taking advantage of the profit possibilities in *Standard's Wheel Truing Machine* is growing rapidly.

Standard *RAILWAY EQUIPMENT MANUFACTURING COMPANY*
GENERAL OFFICE: 4527 Columbia Avenue, Hammond, Indiana
New York • Chicago • St. Paul • San Francisco

Standard *Railway Equipment Manufacturing Co., (Canada) Ltd.*
Sun Life Building, Montreal

Now! Low cost protection against boxcar infestation...

Economical Johns-Manville Stonefelt (Type K) reduces contamination risks, cuts damage claims

Open corrugations filled with Stonefelt. ▶

◀ Full-size pieces of Stonefelt temporarily in position.

End lining is applied the usual way. ▶

Many costly claims can be avoided by filling the spaces behind boxcar linings where contaminating conditions can exist. When you protect these areas with Johns-Manville Stonefelt® (Type K), danger from insect infestation, corrosion, mold and odor is controlled at the source.

Stonefelt is made of specially treated mineral fibers felted into lightweight batts that *will not settle or shake down*. Strong and durable, its uniform structure of finely divided fibers stops the entrance of insects; acts as a barrier against dust and dirt.

Stonefelt fibers are inert, are not affected by moisture, will not sustain insect life. Virtually indestructible in service, Stonefelt provides continued protection against mold, odors and corrosion.

Stonefelt Type "K" is furnished in cut-to-fit box car sets. Individual pieces are supplied up to 30" x 60" to assure maximum ease of handling. Regular car men can easily apply this material.

Ask your Johns-Manville representative for complete data and samples, or write to Johns-Manville, Box 60, New York 16, N. Y.

Johns-Manville 96 YEARS OF SERVICE TO TRANSPORTATION

any way you look at it– inside or out...

the new, improved AMCCW Chilled Car Wheel is stronger, safer, better than ever

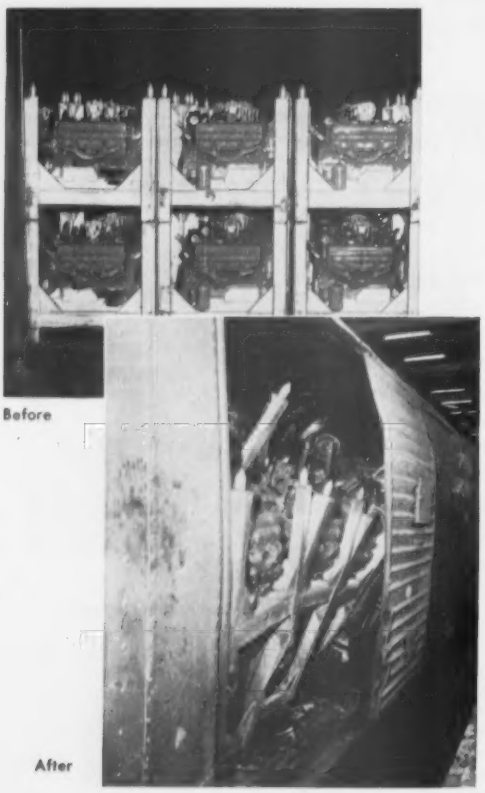
Harder-than-steel tread metal
Tougher, more resilient hub to dampen shock
Best freight car safety record by ICC figures
Faster to bore, easier to mount
Less danger of loose wheels
Smaller investment in wheel inventories
Less wear on rails
Less wear on brake shoes
Less flange-rail resistance
Much lower in first cost or replacement cost
Faster delivery from plant on or near your line
Greater all-round economy

64-page booklet, "Chilled Car Wheel," mailed on request

Association of Manufacturers of Chilled Car Wheels

445 North Sacramento Blvd., Chicago 12, Ill.
member companies: **Albany Car Wheel Co.**
ACF Industries, Inc. • Marshall Car Wheel & Foundry Co.
Southern Wheel Div. (American Brake Shoe Co.)
Griffin Wheel Co. • Pullman-Standard Car Mfg. Co.

NATURE ON A RAMPAGE! Tornado rolls C&O boxcar over and across nine tracks



Before

After

Car Takes Terrific Beating, Lading Damage Slight One hundred and twenty automobile engines in a C&O boxcar caught the full force of a raging tornado. The engines escaped with negligible physical damage.

Nailable Steel Flooring Proves Worth N-S-F, made of low-alloy N-A-X HIGH-TENSILE steel, provided this modern C&O boxcar with the added structural strength to withstand this tornado. Damage would have been much greater if this car had been equipped with an old-fashioned floor. The N-S-F suffered no damage.

TORNADO PROVES LABORATORY TEST RESULTS—NAILABLE STEEL FLOORING is made up of channels welded together, forming a unique nailing groove. It provides a dependable, trouble-free surface that withstands repeated nailings and affords the best possible security for all kinds of freight. Laboratory and actual car tests with impacts under load have established the structural strength so vividly demonstrated by the tornado-tossed car.

Pictures and a full report on this and other cases are available from Great Lakes Steel Corporation, Steel Floor Division, Ecorse, Detroit 29, Michigan. There are also sales representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal and New York.

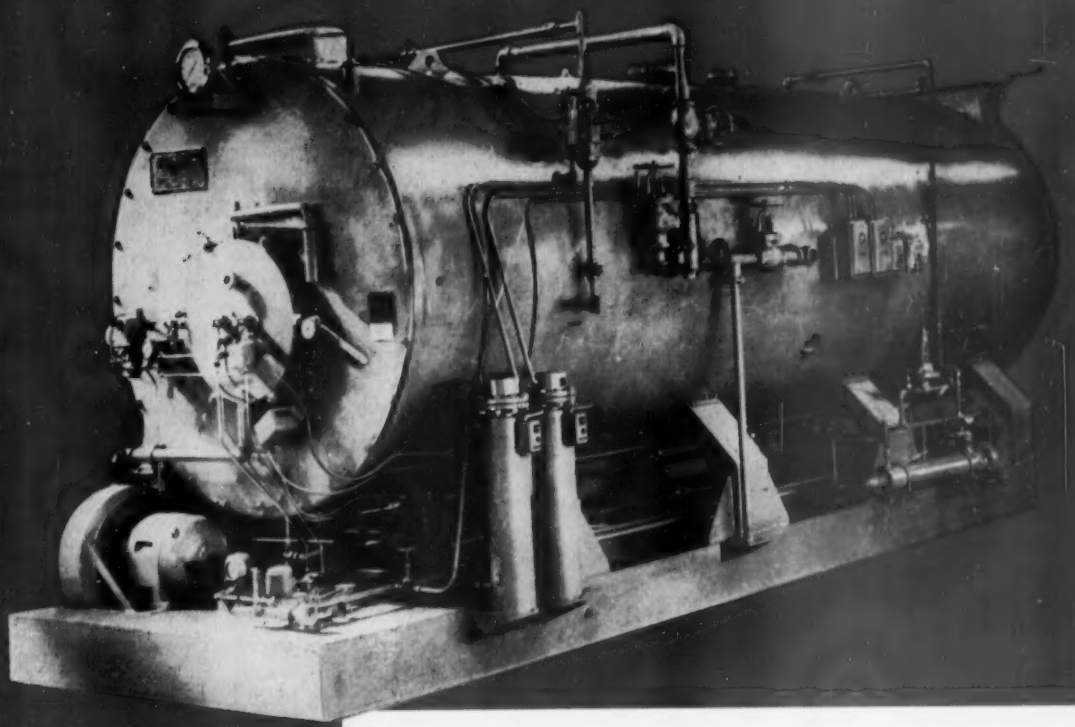
GREAT LAKES STEEL CORPORATION
Steel Floor Division — Ecorse, Detroit 29, Michigan

NATIONAL STEEL CORPORATION

18,000 N-S-F EQUIPPED CARS ARE IN USE BY 55 RAILROADS

"THE RAILROAD BOILER"

Now You Can Lease AMESTEAM Equipment and Let the Savings Pay the Bill!



Why You Save With AMESTEAM Generators

- Completely automatic operation banishes boiler room labor
- Better than 80% thermal efficiency guaranteed
- Evaporates 15¾ lbs. of water on 1 lb. of fuel using No. 6 oil
- Available in single units from 10 to 600 hp. Design pressure—15 to 200 lbs.
- Highly suitable for multiple installations
- Accommodates oil or gas fuel
- A.S.M.E. and Underwriters approved
- Delivered complete — ready for service connections
- Product of Ames Iron Works, with a continuous record of quality boiler production for more than 100 years

A New Leasing Plan

Here is good news for railroad men—a leasing plan that will help you put into service immediately, the proven, efficient AMESTEAM Generator and at the same time, simplify your budget by letting the savings pay the lease costs. This means that you can participate in the same important economies that "The Railroad Boiler" is providing for many roads, both here and abroad.

Under this new plan which we now offer exclusively to the railroads, you avoid capital expenditures. It's as good as it sounds and is a recognized, modern way of doing business in the railroad industry.

Let us tell you all about our Lease Plan. *Write, wire or phone.*

Exclusive Distributors to the Railroads
Engineering, Sales and Service
RAILROAD SUPPLY and EQUIPMENT Inc.
CLARKS SUMMIT, PA. *Phone Clarks Summit 6-2611*

Freight Operating Statistics of Large Railways — Selected Items

	Region, Road and Year	Miles of road operated	Locomotive-Miles: Train-miles	Locomotive-Miles: Principal and helper	Locomotive-Miles: Light	Car-Miles: Loaded (thousands)	Car-Miles: Per cent loaded	Ton-miles (thousands: Gross excl.locos & tenders	Ton-miles (thousands: Net rev. and non-rev.	Road-locos. on line: Serviceable: Unstored	Road-locos. on line: Serviceable: Stored	Road-locos. on line: B.O.	Road-locos. on line: per cent B.O.
New Eng. Region	Boston & Maine	1954	1,664	247,659	250,634	6,885	8,584	67.3	548,212	224,134	71	1	5	6.5
		1953	1,668	254,003	259,332	9,846	9,781	71.1	596,492	249,679	80	3	9	9.8
	N. Y., N. H. & Hfd	1954	1,746	256,578	256,580	18,685	10,860	69.0	659,928	272,663	88	..	5	5.4
		1953	1,748	296,975	297,060	15,676	12,800	71.1	767,822	327,547	91	..	3	3.2
Great Lakes Region	Delaware & Hudson	1954	793	183,503	187,031	7,739	8,601	66.9	594,688	297,860	38	..	5	11.6
		1953	793	211,922	217,471	10,593	10,407	72.7	708,652	380,928	50	..	..	..
	Del., Lack. & Western	1954	962	271,045	280,342	24,112	11,412	66.2	749,932	317,196	62	..	2	3 1
		1953	962	272,966	288,658	22,318	12,687	70.9	814,069	367,877	66	..	..	..
	Erie	1954	2,225	551,102	554,059	19,712	30,713	68.1	1,893,273	730,150	162	..	1	.6
		1953	2,237	625,880	630,096	30,522	35,125	69.6	2,189,610	890,289	165	..	4	2.4
	Grand Trunk Western	1954	952	234,293	242,800	2,097	7,543	58.9	548,578	222,276	63	6	16	18.8
		1953	952	277,182	282,592	2,424	8,408	61.2	590,183	250,184	65	6	10	12.3
	Lehigh Valley	1954	1,150	206,155	209,703	6,253	10,245	65.6	701,767	320,176	29	3	1	3.0
		1953	1,151	234,150	237,932	7,654	11,521	68.1	784,865	371,770	33	..	1	2.9
	New York Central	1954	10,663	2,264,882	2,360,738	80,717	89,109	59.8	6,408,982	2,787,055	575	144	158	18.0
		1953	10,667	2,693,207	2,761,533	103,020	107,909	62.2	7,724,020	3,507,517	701	58	182	19.3
	New York, Chic. & St. L.	1954	2,161	671,595	699,706	6,093	27,574	63.4	1,954,906	843,819	134	39	59	22.4
		1953	2,161	814,607	843,597	8,811	31,909	67.5	2,224,553	1,026,481	206	11	39	15.2
	Pitts. & Lake Erie	1954	221	48,431	48,431	....	2,316	63.8	202,211	122,501	12	7	1	5.0
		1953	221	79,526	81,204	.....	3,635	68.5	307,669	190,999	25	6	4	11.4
	Wabash	1954	2,381	506,701	509,047	6,795	22,360	65.5	1,425,098	535,218	103	..	..	..
		1953	2,381	571,837	575,824	7,276	25,122	67.1	1,614,996	644,023	103	16	26	17.9
Central Eastern Region	Baltimore & Ohio	1954	6,077	1,439,126	1,577,260	130 142	58,155	61.1	4,463,469	2,123,511	410	75	117	19.4
		1953	6,081	1,706,952	1,901,735	194,358	71,812	64.2	5,428,765	2,705,454	489	30	118	18.5
	Bessemer & Lake Erie	1954	209	41,440	44,165	215	2,421	72.7	252,845	168,718	15	..	..	..
		1953	213	56,867	62,223	291	3,234	61.8	383,062	250,895	18	25	..	..
	Central RR Co of New Jersey	1954	613	121,044	121 806	6,326	4,563	65.1	339,216	166,814	59	2	4	6.2
		1953	617	126,013	131,005	9,734	5,006	70.9	364,638	194,288	68	7	7	8.5
	Chicago & Eastern Ill.	1954	868	118,556	118,556	2,598	4,544	66.2	296,187	158,116	24	..	2	7.7
		1953	868	125,582	125,582	2,796	5,242	67.8	350,325	169,550	27	..	2	6.9
	Elgin, Joliet & Eastern	1954	236	71,705	72,194	....	2,283	64.0	178,351	94,846	33	8	2	4.7
		1953	236	99,431	99,963	14	3,203	64.6	255,042	138,512	40	..	1	2.4
	Pennsylvania System	1954	9,906	2,656,638	2,841,020	199,879	114,037	64.5	8,203,107	3,867,187	720	341	376	26.2
		1953	9,939	3,258,457	3,476,729	301,261	137,546	65.7	9,978,141	4,903,187	1,053	130	307	20.6
	Reading	1954	1,304	307,035	308,374	8,828	11,271	61.2	905,021	464,127	165	22	19	9.2
		1953	1,309	357,202	362,088	14,027	13,979	65.7	1,083,073	580,593	170	23	19	9.0
	Western Maryland	1954	857	147,051	152,013	7,800	5,535	63.0	457,894	254,339	35	44	1	1.3
		1953	873	178,581	196,208	15,290	6,907	65.2	565,822	322,258	86	29	3	2.5
Pocahontas Region	Chesapeake & Ohio	1954	5,050	1,235,772	1,251,779	32,203	50,663	57.1	4,360,831	2,360,447	311	86	161	28.9
		1953	5,034	1,361,570	1,394,559	38,092	63,592	58.6	5,472,154	3,050,520	416	41	155	25.3
	Norfolk & Western	1954	2,113	599,836	631,973	43,845	27,611	57.4	2,532,949	1,355,107	197	46	29	10.7
		1953	2,113	723,138	762,589	55,395	34,962	59.3	3,153,131	1,722,490	222	26	21	7.8
Southern Region	Atlantic Coast Line	1954	5,340	710,760	710,760	7,982	21,286	59.4	1,553,776	709,913	240	..	7	2.8
		1953	5,367	709,106	709,115	7,880	22,251	63.0	1,568 600	734,182	243	..	5	2.0
	Central of Georgia	1954	1,731	177,442	177,468	1,902	6,987	68.4	472,336	223,681	69	..	1	1.4
		1953	1,754	199,274	199,326	2,391	7,417	68.6	502,055	238,288	71	..	1	1.4
	Gulf, Mobile & Ohio	1954	2,718	267,836	267,836	428	14,189	70.2	939,107	445,642	85	..	4	4.5
		1953	2,718	318,551	318,551	213	16,876	71.1	1,117,035	542,117	84	..	5	5.6
	Illinois Central	1954	6,537	1,215,918	1,220,192	38,725	47,578	62.8	3,449,296	1,590,662	464	113	90	13.5
		1953	6,538	1,418,114	1,421,232	49,222	52,038	63.1	3,771,791	1,749,606	529	64	70	10.6
	Louisville & Nashville	1954	4,720	836,855	840,855	15,726	30,233	61.5	2,277,579	1,146,442	221	84	8	2.5
		1953	4,728	975,807	1,034,676	22,021	35,674	63.6	2,651,549	1,359,079	239	73	31	9.0
	Nash., Chatt. & St. Louis	1954	1,043	162,649	165,797	3,483	5,393	70.5	350,278	163,759	49	..	4	7.5
		1953	1,032	187,770	192,644	4,321	6,567	71.3	433,135	208,926	48	..	4	7.7
	Seaboard Air Line	1954	4,053	545,276	545,276	598	21,129	63.9	1,505,828	698,513	141	..	10	6.6
		1953	4,068	554,925	554,925	642	21,712	64.6	1,537,251	711,824	133	14	10	6.4
	Southern	1954	6,262	924,245	924,330	11,471	38,938	67.3	2,546,019	1,155,371	267	..	2	.7
		1953	6,263	973,029	973,069	12,079	40,731	71.0	2,576,728	1,196,878	236	5	4	1.6
Northwestern Region	Chicago & North Western	1954	7,850	762,698	764,655	10,799	32,788	63.6	2,319 607	1,000,034	167	36	55	21.3
		1953	7,849	809,834	812,548	14,241	34,945	66.1	2,483.548	1,083,295	239	31	87	24.4
	Chicago Great Western	1954	1,437	138,636	138,636	233	8,152	65.5	575,399	251,897	30	..	3	9.1
		1953	1,435	140,670	140,788	827	8,788	71.2	587,747	279.121	32	..	2	5.9
	Chic., Milw., St. P. & Pac.	1954	10,632	1,023,487	1,040,298	25,415	43,266	60.2	3,067,713	1,303,272	303	71	39	9.4
		1953	10,662	1,151,803	1,177,188	35,448	48,964	64.9	3,392,969	1,535,906	363	32	38	8.8
	Chic., St. P., Minn. & Omaha	1954	1,606	171,948	173,816	5,771	5,902	67.7	414,717	189,736	64	1	19	22.6
		1953	1,606	176,433	179,438	7,115	5,805	68.3	402,868	188,932	68	5	29	28.4
	Duluth, Missabe & Iron Range	1954	566	146,112	146,553	1,059	6. 17	50.6	713,136	433,016	51	10	5	7.6
		1953	567	224,741	225,987	1,664	10,[illegible]	51.1	1,087,815	666,001	61	..	4	6.2
	Great Northern	1954	8,294	1,162,909	1,168,974	36,134	46,745	62.4	3,643,966	1,772,204	253	159	45	9.8
		1953	8,291	1,251,788	1,256,335	39,671	51,143	62.7	4,046,750	2,054,827	320	107	33	7.2
	Minneap., St. P. & S. Ste. M.	1954	4,169	416,801	421,775	5,554	14,726	64.2	1,024,098	487.122	97	2	17	14.7
		1953	4,172	411,697	417,171	6,240	14,324	65.1	989,072	473,937	109	..	9	7.6
	Northern Pacific	1954	6,570	924,734	951,341	35,722	35,995	60.0	2,708,366	1,147,151	299	18	56	15.0
		1953	6,583	947,378	980,901	37,987	38,059	65.0	2,759,150	1,258,089	330	11	59	14.8
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1954	13,076	2,137,511	2,201,651	51,593	93,011	65.2	6,188,205	2,362,294	511	117	38	5.7
		1953	13,095	2,522,753	2,600,215	82,763	107,713	66.2	7,259,520	2,872,962	558	103	64	8.8
	Chic., Burl. & Quincy	1954	8,824	1,178,841	1,176,526	28,504	48,131	65.2	3,196,253	1,378,342	242	60	36	10.7
		1953	8,833	1,262,715	1,269,456	41,369	53,240	67.4	3,536.020	1,597,851	319	31	75	17.6
	Chic., Rock I. & Pac.	1954	7,860	879,040	872,940	1,530	32,122	60.7	2,371,024	1,004,572	165	4	6	3.4
		1953	7,861	948,347	945,179	5,106	35,454	66.5	2,476,767	1,118,135	169	2	11	6.0
	Denver & R. G. Wn.	1954	2,164	342,388	366,361	34,326	15,362	69.3	1,050,216	475,461	84	30	16	18.6
		1953	2,313	357,373	387,644	39,324	16,766	69.9	1,171,431	550,605	103	27	24	15.6
	Southern Pacific	1954	8,063	2,251,192	2,368,519	275,171	97,478	62.0	6,847,096	2,684,525	666	10	155	18.7
		1953	8,058	2,384,946	2,526,583	325,305	104,672	63.8	7,228,892	2,897,734	719	23	132	15.1
	Union Pacific	1954	9,816	2,731,534	2,790,875	127,676	115,724	63.0	7,826,798	3,077,426	504	201	113	13.8
		1953	9,824	3,058,229	3,155,251	200,620	122,373	63.5	8,452,944	3,463,356	640	56	135	16.2
	Western Pacific	1954	1,190	235,284	238,393	8,501	11,230	73.0	700,067	320,320	39	3	1	2.3
		1953	1,190	260,235	267,330	17,356	12,494	70.9	816,291	378,264	41	12	3	5.4
Southwestern Region	International-Gt. Northern*	1954	1,103	127,301	127,301	.....	4,984	64.6	372,994	171,212	42	..	3	6.7
		1953	1,104	160,166	160,166	....	5,806	64.7	416.618	195,475	50	..	3	5.7
	Kansas City Southern	1954	886	136,900	136,946	251	7,445	64.6	530,678	232,513	25	..	3	10.7
		1953	886	168,592	168,614	192	9,032	66.2	643,818	301,590	24	..	1	4.0
	Mo.-Kans.-Texas Lines	1954	3,229	340,745	340,745	3,628	13,137	63.3	863,218	352,518	87	..	..	..
		1953	3,230	378,212	378,212	3,871	14,674	65.5	957,331	418,432	88	7	..	..
	Missouri Pacific*	1954	6,887	964,398	965,703	10,786	39,773	66.3	2,737,368	1,210,717	229	60	85	22.7
		1953	6,917	1,225,369	1,229,240	15,084	47,168	66.0	3,207,341	1,438,151	309	24	65	16.3
	Texas & Pacific	1954	1,822	299,195	299,195	2,805	12,920	64.7	886,991	345,999	59	..	2	3.3
		1953	1,831	311,679	311,679	3,857	14,337	67.2	948,703	382,621	60	..	..	..
	St. Louis-San Francisco	1954	4,564	581,227	581,227	5,562	21,947	63.6	1,491,887	643,235	120	..	11	8.4
		1953	4,564	625,269	625,277	5,995	24,260	66.1	1,636,555	736,156	189	..	3	1.6
	St. Louis Southw. Lines	1954	1,555	281,072	281,078	1,365	12,423	72 1	757,995	338,834	55	7	10	13.9
		1953	1,561	307,583	307,625	4,142	14,391	72.8	877,088	392,071	60	25	2	2.3
	Texas & New Orleans	1954	4,275	675,976	675,976	4,918	25,807	62.7	1,806,077	763,325	153	..	28	15.5
		1953	4,279	743,391	743,391	8,090	27,396	63.8	1,914,570	824,290	183	..	33	15.3

For the Month of August 1954 Compared with August 1953

Region	Road	Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi per l'd car-mile	Net ton-mi. per car-day	Car-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine	1954	2,762	7,258	10,020	5.3	35,960	2,220	907	26.1	753	42.8	4,345	16.2	121.6
		1953	1,604	7,965	9,569	2.3	38,008	2,353	985	25.5	867	47.8	4,829	16.2	106.7
	N. Y., N. H. & Hrtfd.	1954	2,888	12,655	15,543	3.2	41,063	2,572	1,063	25.1	599	34.6	5,038	16.0	119.4
		1953	2,068	15,227	17,235	2.6	40,265	2,585	1,103	25.6	654	35.9	6,045	15.6	130.2
Great Lakes Region	Delaware & Hudson	1954	7,249	3,900	11,149	5.4	62,533	3,260	1,633	34.6	864	37.3	12,117	19.3	157.1
		1953	4,027	5,100	9,127	7.2	62,026	3,361	1,807	36.6	1,258	47.3	15,496	18.5	165.9
	Del., Lack. & Western	1954	8,449	8,294	16,743	4.3	48,202	2,828	1,196	27.8	617	33.5	10,636	17.4	170.5
		1953	5,982	10,288	16,270	4.4	50,696	3,035	1,371	29.0	734	35.7	12,336	17.0	170.9
	Erie	1954	12,587	14,549	27,136	5.6	65,504	3,466	1,337	23.8	852	52.7	10,586	19.1	125.8
		1953	7,324	20,256	27,580	3.3	63,700	3,538	1,439	25.3	1,028	58.3	12,838	18.2	138.4
	Grand Trunk Western	1954	5,202	7,575	12,777	5.4	49,235	2,371	961	29.5	549	31.6	7,532	21.0	105.4
		1953	3,459	9,454	12,913	4.7	43,656	2,150	912	29.8	638	35.0	8,477	20.5	125.4
	Lehigh Valley	1954	10,192	7,442	17,634	5.6	67,020	3,446	1,572	31.3	606	29.5	8,981	19.7	226.0
		1953	5,821	10,583	16,404	4.9	64,365	3,414	1,617	32.3	732	33.3	10,419	19.2	249.9
	New York Central	1954	81,606	71,817	153,423	13.1	49,919	2,882	1,253	31.3	584	31.2	8,431	17.6	98.2
		1953	68,498	97,862	166,360	9.5	49,173	2,913	1,323	32.5	695	34.3	10,607	17.1	110.2
	New York, Chic. & St. L.	1954	11,213	12,464	23,677	8.2	53,848	2,958	1,277	30.6	1,148	59.1	12,596	18.5	112.2
		1953	7,186	19,859	27,045	5.9	49,044	2,780	1,283	32.2	1,230	56.6	15,323	18.0	118.1
	Pitts. & Lake Erie	1954	10,432	5,594	16,026	7.5	60,452	4,175	2,529	52.9	243	7.2	17,881	14.5	87.1
		1953	3,259	9,727	12,986	8.4	58,304	3,873	2,404	52.5	499	13.9	27,879	15.1	80.1
	Wabash	1954	9,957	9,092	19,049	9.9	62,469	2,829	1,062	23.9	895	57.1	7,251	22.2	170 4
		1953	8,180	11,562	19,742	9.5	64,304	2,843	1,134	25.6	1,060	61.6	8,725	22.8	136.8
Central Eastern Region	Baltimore & Ohio	1954	59,576	35,452	95,028	14.6	49,194	3,140	1,494	36.5	714	32.0	11,272	15.9	95.1
		1953	51,701	51,361	103,062	5.3	47,197	3,232	1,611	37.7	841	34.8	14,352	14.8	112.1
	Bessemer & Lake Erie	1954	6,512	960	7,472	13.5	87,158	6,265	4,181	69.7	726	14.3	26,041	14.3	111.3
		1953	5,306	1,470	6,776	12.3	100,095	6,895	4,516	77.6	1,224	25.5	37,997	14.9	51.9
	Central RR Co. of New Jersey	1954	5,893	8,842	14,735	12.0	38,977	2,926	1,439	36.6	368	15.5	8,778	13.9	85.8
		1953	3,562	9,811	13,373	9.6	37,967	3,032	1,616	38.8	468	17.0	10,158	13.1	76.0
	Chicago & Eastern Ill.	1954	3,209	2,752	5,961	13.5	44,707	2,513	1,342	34.8	848	36.8	5,876	17.9	155.4
		1953	2,345	3,529	5,874	7.7	45,029	2,817	1,363	32.3	860	39.2	6,301	16.1	155.0
	Elgin, Joliet & Eastern	1954	7,934	6,224	14,158	7.6	22,505	2,574	1,369	41.5	215	8.1	12,964	9.0	72.5
		1953	7,008	10,704	17,712	6.5	20,972	2,689	1,461	43.2	246	8.8	18,933	8.2	103.8
	Pennsylvania System	1954	115,914	86,194	202,108	11.5	55,017	3,175	1,497	33.9	617	28.2	12,593	17.8	74.9
		1953	104,280	99,297	203,577	7.5	51 801	3,162	1,554	35.6	777	33.2	15,914	16.9	88.9
	Reading	1954	19,277	12,764	32,041	8.3	42,495	2,951	1,513	41.2	466	18.5	11,481	14.4	60.4
		1953	14,516	18,828	33,344	6.1	42,549	3,041	1,630	41.5	570	20.9	14,308	14.0	69.1
	Western Maryland	1954	7,430	3,259	10,689	4.0	44,936	3,178	1,765	46.0	814	28.1	9,573	14.4	72.1
		1953	5,723	2,941	8,664	5.1	44,839	3,226	1,837	46.7	1,148	37.7	11,908	14.2	62.7
Pocahontas Region	Chesapeake & Ohio	1954	58,389	22,600	80,989	3.9	66,647	3,543	1,918	46.6	963	36.2	15,078	18.9	80.3
		1953	47,377	26,004	73,381	3.3	72,594	4,037	2,250	48.0	1,301	46.2	19,548	18.1	82.0
	Norfolk & Western	1954	39,387	6,413	45,800	2.8	74,650	4,319	2,310	49.1	957	33.9	20,688	17.7	86.1
		1953	29,854	8,030	37,884	2.1	76,214	4,449	2,430	49.3	1,438	49.2	26,296	17.5	107.5
Southern Region	Atlantic Coast Line	1954	21,106	14,077	35,183	2.6	38,944	2,194	1,002	33.4	666	33.6	4,288	17.8	104.0
		1953	15,814	14,873	30,687	2.3	38,146	2,224	1,041	33.0	749	36.0	4,413	17.2	103.9
	Central of Georgia	1954	3,307	5,314	8,621	5.6	47,624	2,671	1,265	32.0	878	40.1	4,168	17.9	88.8
		1953	2,628	5,564	8,192	3.1	44,473	2,532	1,202	32.1	961	43.6	4,382	17.7	100.8
	Gulf, Mobile & Ohio	1954	5,691	8,378	14,069	3.7	68,860	3,511	1,666	31.4	1,020	46.3	5,289	19.6	105.0
		1953	4,500	10,583	15,083	4.2	68,563	3,514	1,706	32.1	1,181	51.7	6,434	19.6	123.9
	Illinois Central	1954	29,859	21,518	51,377	3.5	48,109	2,870	1,323	33.4	999	47.6	7,849	17.0	66.2
		1953	25,963	26,409	52,372	3.0	46,138	2,699	1,252	33.6	1,104	52.0	8,632	17.3	76.6
	Louisville & Nashville	1954	38,218	11,019	49,237	2.8	47,335	2,729	1,374	37.9	748	32.0	7,835	17.4	96.8
		1953	31,086	14,290	45,376	4.2	45,777	2,726	1,397	38.1	940	38.8	9,273	16.8	106.4
	Nash., Chatt. & St. Louis	1954	3,715	3,172	6,887	4.8	40,997	2,155	1,007	30.4	769	36.0	5,065	19.0	111.0
		1953	2,173	5,237	7,410	2.8	43,154	2,313	1,115	31.8	965	42.5	6,531	18.7	130.4
	Seaboard Air Line	1954	14,065	10,634	24,699	2.4	51,262	2,799	1,298	33.1	915	43.3	5,560	18.6	137.4
		1953	11.383	12,751	24,134	2.0	49,693	2,801	1,297	32.8	959	45.3	5,645	17.9	133.2
	Southern	1954	19,187	23,827	43,014	4.0	48,494	2,767	1,256	29.7	866	43.4	5,952	17.6	121.8
		1953	17,012	27,725	44,737	3.0	45,714	2,663	1,237	29.4	872	41.8	6,165	17.3	139.1
Northwestern Region	Chicago & North Western	1954	20,702	31,456	52,158	5.6	51,201	3,133	1,351	30.5	651	33.6	4,109	16.8	105.1
		1953	21,772	31,945	53,717	5.3	50,868	3,165	1,381	31.0	655	32.0	4,452	16.6	80.5
	Chicago Great Western	1954	1,867	4,385	6,252	3.2	77,183	4,156	1,819	30.9	1,330	65.7	5,655	18.6	141.5
		1953	993	4,583	5,576	3.4	74,758	4,190	1,990	31.8	1,545	68.3	6,274	17.9	140.9
	Chic., Milw., St. P. & Pac.	1954	38,302	32,012	70,314	7.0	53,782	3,013	1,280	30.1	610	33.7	3,954	17.9	91.2
		1953	34,573	36,591	71,164	5.3	51,096	2,963	1,341	31.4	708	34.8	4,647	17.3	99.0
	Chic., St. P., Minn. & Omaha	1954	1,106	8,161	9,267	4.6	33,442	2,487	1,138	32.1	687	31.5	3,811	13.9	77.1
		1953	1,168	7,704	8,872	5.8	34,063	2,343	1,099	32.5	688	31.0	3,795	14.9	68.0
	Duluth, Missabe & Iron Range	1954	14,030	713	14,743	2.5	85,283	5,193	3,153	63.5	943	29.3	24,679	17.5	81.4
		1953	14,983	708	15,691	4.2	82,742	5,067	3,102	63.3	1,380	42.6	37,890	17.1	124.7
	Great Northern	1954	25,147	27,778	52,925	2.6	53,761	3,173	1,543	37.9	1,099	46.5	6,893	17.2	91.4
		1953	24,562	24,563	49,125	3.1	51,844	3,275	1,663	40.2	1,337	53.1	7,995	16.9	96.3
	Minneap., St. P. & S. Ste. M.	1954	6,916	6,381	13,297	5.8	47,692	2,484	1,182	33.1	1,084	51.1	3,769	19.4	125.7
		1953	6,780	9,756	16,536	5.2	45,708	2,423	1,161	33.1	991	46.0	3,664	19.0	126.4
	Northern Pacific	1954	21,985	22,597	44,582	5.3	53,221	2,941	1,246	31.9	873	45.7	5,632	18.2	91.5
		1953	21,401	19,152	40,553	6.0	51,906	2,935	1,338	33.1	1,021	47.5	6,165	17.8	89.7
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1954	60,353	28,199	88,552	3.8	65,930	2,906	1,110	25.4	849	51.3	5,828	22.8	115.8
		1953	40,970	33,178	83,148	3 1	64,655	2,892	1,145	26.7	1,095	62.0	7,077	22.5	125.8
	Chic., Burl. & Quincy	1954	21,885	24,916	46,801	3.1	55,513	2,718	1,172	28.6	945	50.6	5,039	20.5	119.7
		1953	21,077	22,504	43,581	2.7	54,584	2,810	1,270	30.0	1,174	58.1	5,835	19.5	106.0
	Chic., Rock I. & Pac.	1954	13,170	16.844	30,014	6.2	51,247	2,704	1,146	31.3	1,061	55.9	4,123	19.0	167.8
		1953	11,183	21,211	32,394	4.3	49,978	2,622	1,184	31.5	1,086	51.8	4,588	19.1	175.9
	Denver & R. G. Wn.	1954	8,641	7,205	15,846	3.8	58,391	3,074	1,392	31.0	972	45.3	7,088	19.0	99.3
		1953	7,213	8,530	15,743	3.3	59,098	3,287	1,545	32.8	1,130	49.2	7,679	18.0	96.5
	Southern Pacific	1954	33,054	36,752	69,806	2.0	56,516	3,075	1,206	27.5	1,215	71.1	10,740	18.6	110.9
		1953	30,523	42,776	73,299	2.5	51,810	3,062	1,227	27.7	1,239	70.2	11,600	17.1	115.2
	Union Pacific	1954	34,181	35,670	69,851	2.6	75,535	2,899	1,140	26.6	1,386	82.7	10,113	26.4	117.3
		1953	33,453	39,950	73,403	2.0	68,284	2,801	1,147	28.3	1,580	87.8	11,372	24.7	133.7
	Western Pacific	1954	2,633	3,294	5,927	4.9	77,159	2,984	1,366	28.5	1,768	84.9	8,683	25.9	189.2
		1953	2,285	3,813	6,098	6.1	76,525	3,151	1,460	30.3	1,921	89.5	10,254	24.4	167.9
Southwestern Region	International-Gt. Northern*	1954	725	5,719	6,444	2.4	56 738	2,931	1,345	34.4	874	39.4	5,007	19.4	95.8
		1953	814	5,969	6,783	3.6	50,745	2,609	1,224	33.7	942	43.3	5,712	19.5	103.0
	Kansas City Southern	1954	1,103	5,821	6,924	4.0	79,229	3,895	1,706	31.2	1,040	51 6	8,465	20.4	180.7
		1953	837	6,080	6,917	2.1	76,039	3,829	1,794	33 4	1,393	63.0	10,980	19 9	233.4
	Mo.-Kans.-Texas Lines	1954	4,859	6,185	11,044	8.3	53,646	2,540	1,037	26.8	1,032	60.7	3,522	21.2	136.3
		1953	3,779	7,149	10,928	4.5	53,611	2,536	1,109	28.5	1,251	67.0	4,179	21.2	140.1
	Missouri Pacific*	1954	20,178	17,097	37,275	4.7	61,826	2,848	1,259	30.4	1,001	49.5	5,671	21.8	89.9
		1953	16,997	16,809	33,806	3.8	57,278	2,628	1,178	30.5	1,324	65.8	6,707	21.9	107.9
	Texas & Pacific	1954	3,450	5,541	8,991	5.2	67,922	2,975	1,160	26.8	1,242	71.6	6,126	22.9	170.9
		1953	2,076	7,496	9,572	3.4	70,259	3,046	1,229	26.7	1,296	72.2	6,741	23.1	180.6
	St. Louis-San Francisco	1954	14,865	9,851	24,716	3.0	49,665	2,569	1,108	29.3	860	46.1	4,546	19.3	158.6
		1953	10,891	12,069	22,960	3.4	46,144	2,622	1,179	30 4	1,037	51 6	5,203	17.6	117.6
	St. Louis Southw. Lines	1954	2,685	4,162	6,847	4.9	53,584	2,702	1,208	27.3	1,630	82.8	7,029	19.9	137.7
		1953	2,428	4,808	7,236	1.6	57,349	2,854	1,276	27.2	1,740	87.7	8,102	20.1	123.8
	Texas & New Orleans	1954	6,952	17,018	23,970	1.8	53,354	2,690	1,137	29.6	1,084	58.4	5,760	20.0	128.0
		1953	5,585	16,731	22,316	1.4	50,560	2,594	1,117	30.1	1,270	66.2	6,214	19.6	118.5

*Report of trustee or trustees.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Letters from Readers

More or Less Inspection?

CLEVELAND, OHIO

TO THE EDITOR:

The article on page 61 of the September 20 *Railway Age* argues that one additional hour per train devoted to air-brake inspection would result in faster overall freight train movement. Nine randomly selected cases of air-brake failure resulted in 13 hours of delay for trains directly affected and nine for trains indirectly affected. The assertion is made that nine extra inspection hours would have eliminated the 22-hour delay.

The impression is given that all 228 cases of delay observed would show $13/9$ perhaps 330 hours (228 times —) of direct and 228 hours of indirect train delay for a total of 558 hours. But how, preliminary to a failure, can you guess which 228 trains to inspect more carefully out of all those running? An [extra] hour of inspection must be invested in *every* train running to catch *all* defective air brakes. You will inspect many more than 558 trains for an extra hour each before you find 228 cases of defective air brakes. Air brakes just aren't that bad.

Thus, you will delay trains more hours in extra inspection of air brakes than you will eliminate in otherwise-occurring train delays due to defective air brakes. Where is the pay-off?

Air-brake inspection is not necessarily a poor investment. But it must be defended in terms other than those used in the article.

H. W. LADEN

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Why Not a Car Hire Bank?

PITTSBURGH, PA.

TO THE EDITOR:

Why do the railroads continue to spend millions for clerical help and machine rental to pay each other the amounts due for use of each other's freight cars? Why not set up a "bank" to handle this transaction?

A "bank" would function as follows:

(1) A basic credit balance of the number of cars owned for interchange service would be carried for each railroad.

(2) The plan would be inaugurated by a physical check to determine the number of cars on each line. The individual railroads would then begin a daily report to the bank, indicating total cars from and to each of its connections for 24 hours, which would produce a net change figure and a new balance for each railroad. Most errors could be traced and reconciled by comparing reports of connecting lines. In extreme cases, physical checks supervised by bank employees might be necessary.

(3) The bank would make one daily entry for each railroad: (a) If more cars are on hand than owned, the railroad would be charged for the difference at the current per diem rate. (b) If fewer cars are on hand than owned, the railroad would be credited with the difference at the current per diem rate. (c) At intervals the bank would settle with each railroad, paying or collecting the indicated amount. (d) Minor overages or shortages in the total cars reported could be prorated over all railroads periodically to balance the bank's books.

A "bank plan" would affect only the *settlement* procedures. No change in car ownership, home routing practice, or any of the present methods of controlling car supply would be involved.

Under the plan it would no longer be necessary to follow the complicated history of each car's movement, because the only figure needed for settlement would be a total of *all* cars on each road as of a fixed time each day.

Such a plan would eliminate the costly and complicated settlement process now in use. The potential savings should be sufficient incentive to overcome the many objections and local problems that a plan of such broad scope might encounter.

R. D. LAKE,
Staff Assistant to President,
Bessemer & Lake Erie

KEEP MORE PASSENGERS COMFORTABLE

. . . with bright, steady lights and cool cars!

Built by The Budd Company, this new Santa Fe coach on the El Capitan provides maximum travel comfort, with adjustable head and leg rests, fluorescent lighting, air conditioning, clean styling.

COMFORTABLE passengers are satisfied customers. Exide-Ironclad batteries insure ample power for bright, steady lights and comfortable cars even during long stops. Built to withstand hard, continuous service, they give you worry-free performance, maintain high, uniform voltage under all operating loads. Lower costs for operation, maintenance and depreciation make Exide-Ironclad batteries your best power buy—AT ANY PRICE!

THE POSITIVE PLATES are the heart of any battery. Only Exide uses a slotted tube construction. By use of tubes, more active material is exposed to the electrolyte, providing *greater power*. Also, more active material is retained, giving *longer working life*.

IMPROVED Exide-Ironclads now have power tubes made from *non-oxidizing* plastic for longest battery life, more capacity in the same space. For full details, call your Exide sales engineer—write for Form 5010 (Installation and Maintenance of Car Lighting and Air Conditioning Batteries).

Your best power buy
. . . AT ANY PRICE!

Exide®
IRONCLAD® BATTERIES

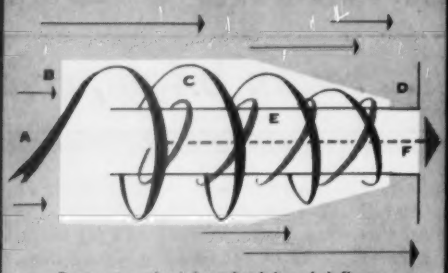
Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.

so NEW

so REVOLUTIONARY

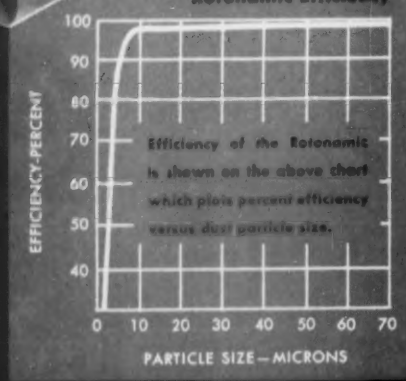
YOU'LL BE AMAZED!

Here's the Rotonamic Principle



Dust enters the inlet tube (a) and deflector vanes (b) set up a cyclonic action. While traveling along the primary chamber (c) dust particles are centrifuged towards the walls and carried into a special dust bin at (d) by the 10%-Bleed-off air. The remaining 90% of the air reverses direction, spirals back along the discharge tube (e) centrifuging the remainder of the dust. Clean, filtered air reverses direction once again and exits at (f). The dirt laden air is discharged to atmosphere.

Check the Rotonamic Efficiency



As advanced and different as the first **FAR-AIR** high velocity filter, the Rotonamic is the latest important development in air filters. It operates with constant high efficiency over a wide range of dust concentrations, requires no maintenance, never loads with dirt. Handling 1200 cfm at 4.6" wg pressure drop in a 20 x 20" face area, Farr Rotonamic is the most economical solution to engine air cleaning.

For complete information write to P. O. Box 45187, Airport Station, Los Angeles 45, California.

ANNOUNCING THE FARR

Rotonamic

AIR CLEANER

. . . a compact, highly efficient panel-type unit that requires no oiling and is self-cleaning!

FARR—the pioneer developer of the first high velocity air filter whose performance became the standard of the Railroad industry—proudly announces the ROTONAMIC. This new device operates on the principle of centrifugal air cleaning. After years of development and rugged road testing under all dust conditions on several major railroads, the ROTONAMIC has a record of proved efficiency, greater safety factor for extreme dust concentration, and lower maintenance costs.

ORIGINATORS OF FAR AIR CERTIFIED FILTER SERVICE

FARR COMPANY

NO COMPROMISE ON QUALITY

Los Angeles, New York, Chicago,

MANUFACTURED UNDER LICENSE BY FARR COMPANY MANUFACTURING LTD MONTREAL CANADA

AIR COSTS MONEY!

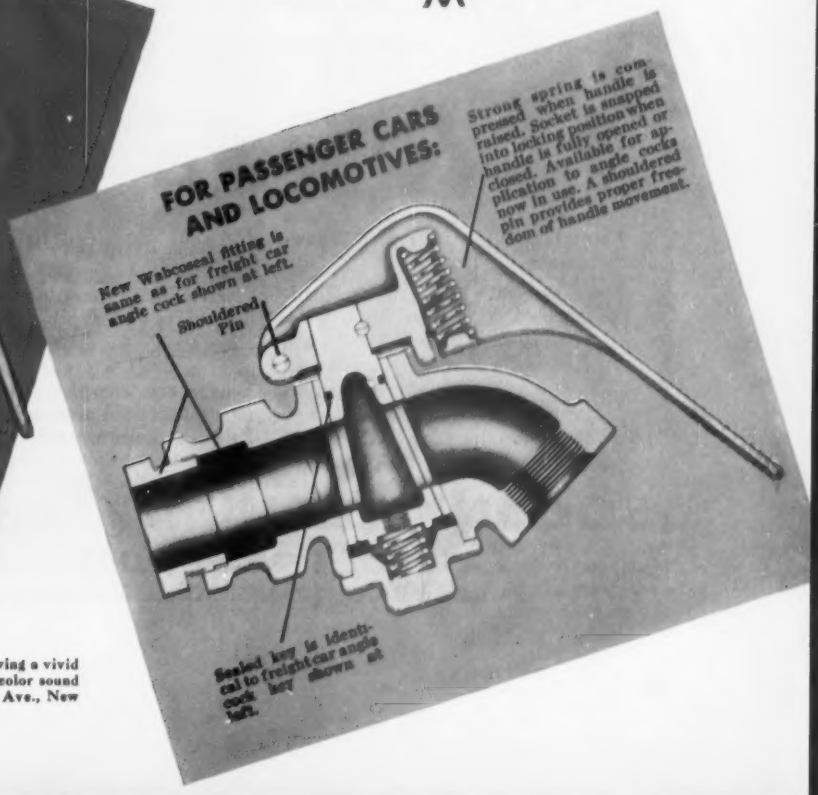
Stop leakage with new WABCOSEAL® Angle Cocks

BRAKE pipe leakage increases compressor operation, lowers its efficiency and causes difficult train handling. Reduce leakage to the minimum by installing the *new* Wabcoseal Angle Cock shown here. Two styles are available—with or without spring-locking handle.

Heart of the new Wabcoseal Angle Cocks is the sealed key that stays tight through a wide degree of key wear. A Wabco compression ring replaces the standard tapped thread at the brake pipe end to give a positive seal. Also, adequate end tolerance is provided so brake pipe nipple need not be cut to precise length.

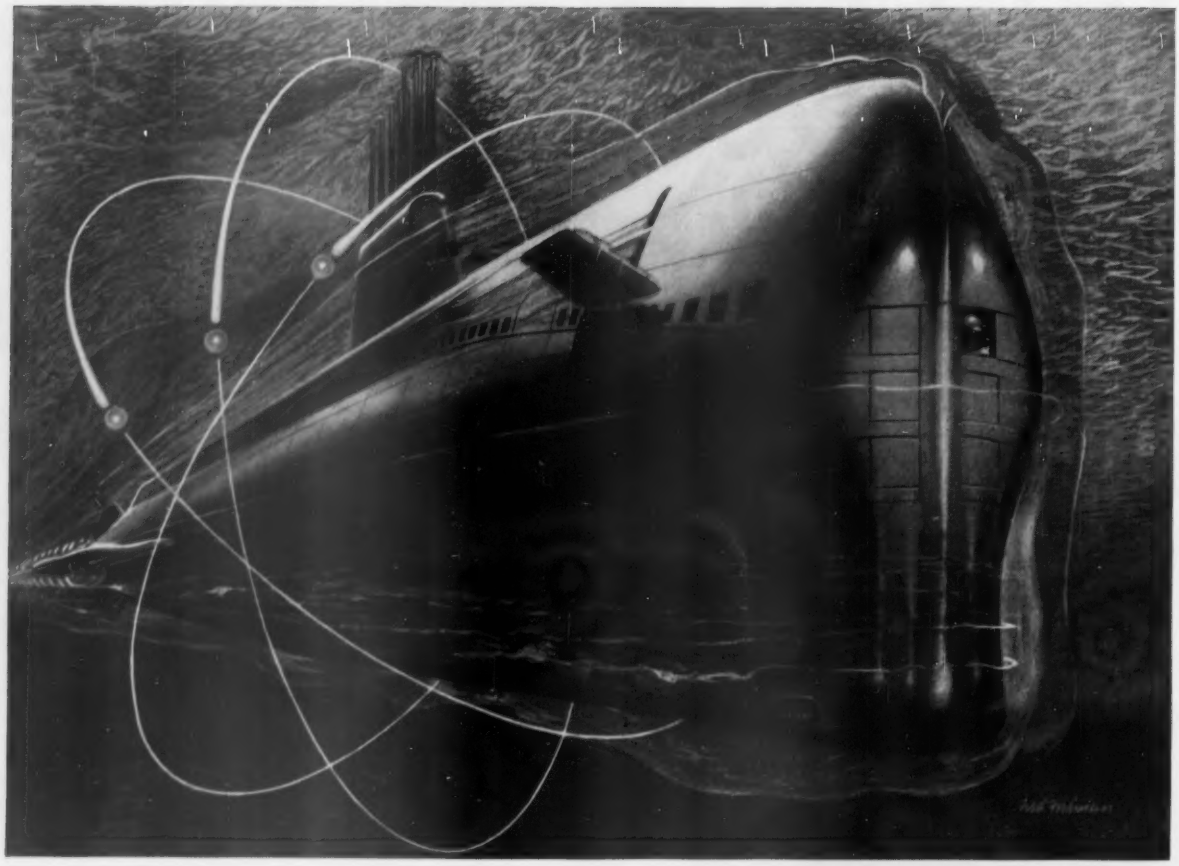
The passenger car and locomotive angle cock has a spring loaded handle that snaps the socket into locked position when handle is fully open or closed and keeps it there despite vibration and shock.

The sealed key and spring locking handle are available separately for application to present angle cocks.



NEW MOVIE AVAILABLE entitled, *"AT THIS MOMENT"*—showing a vivid story of modern railroad progress. Length 26 minutes, on 16 mm. color sound film. For use of film write: United World Films, Inc., 1445 Park Ave., New York or Association Films, Inc., 347 Madison Ave., New York.

Westinghouse Air Brake
COMPANY
AIR BRAKE DIVISION WILMERDING, PA.



ATOMIC SUB BUILDERS

Rely on World's Greatest Lubrication Knowledge and Engineering Service

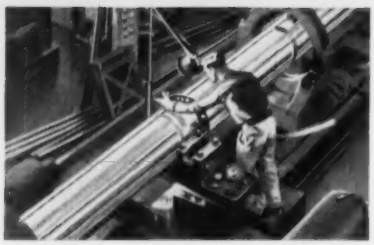
AFTER 54 years of building over 300 "conventional" submarines for the U. S. Navy and our allies, Electric Boat Division, General Dynamics Corp., marks its entry into the atomic age with the launching of the "Nautilus"—world's first atomic powered submarine.

Electric Boat, with its sprawling foundries and shops along the Thames River at Groton, Conn., is really many industries in one. It casts its own metals—both ferrous and non-ferrous. It shapes and machines metal parts—from thick armor plate to parts with microscopic tolerances. It has 27 overhead cranes, marine railway and land railroads, a fleet of trucks, low- and high-pressure compressors, its own Diesel power plant.

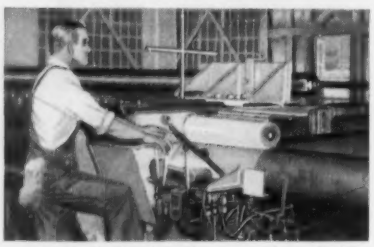
This wide variety of costly machinery represents almost every lubrication condition found in modern industry. That is why Electric Boat relies 100% on Gargoyle lubricants and a program of Correct Lubrication—has done so for 34 years.

★ ★ ★

You can give your plant, mine or mill this same unsurpassed protection. Just call your Socony-Vacuum representative.



A snorkel intake tube being machined to very precise tolerances on one of the large lathes in the Groton plant.



Hydraulic bender shapes section of 8-in. steel pipe in two minutes. This operation formerly took a full day.

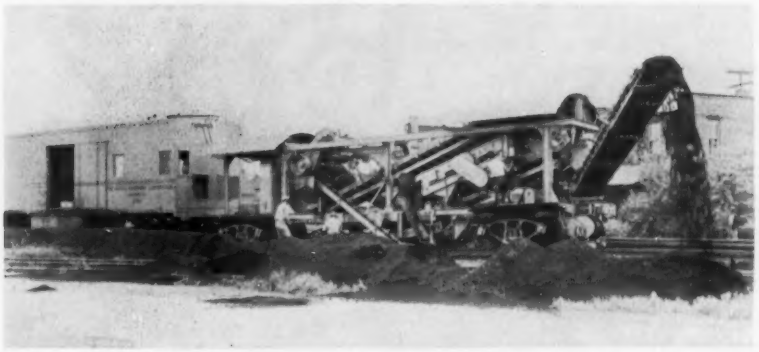
SOCONY-VACUUM *Correct Lubrication*

FIRST STEP IN CUTTING COSTS

SOCONY-VACUUM OIL CO., INC., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

SOCONY-VACUUM

What's New in Products



Improved Ballast Cleaner

Cleaned ballast is returned to the track immediately behind the excavating mechanism in an improved version of the Matisa ballast-cleaning machine. Using the basic principle of complete ballast cleaning by means of an endless digging chain, which passes under the track and conveys the dirty ballast to a system of vibrating screens, the machine consists of two parts—a cleaning unit and a power unit.

The cleaning unit, mounted on two standard four-wheel trucks, consists of a steel frame carrying digging chains, conveyors, vibrating screens, a cable winch and their driving mechanisms. The power unit is a steel box car which houses generators, fuel tanks and other auxiliary facilities, motive power for moving the cleaner to work sites, a compressor and air reservoir to operate the unit's air-brake system and signal horns, and a workshop and spare parts section containing tools.

While in operation, the cleaning unit is pulled along by a cable which is fastened to the track some distance ahead. As the cleaner moves along, the revolving digging chain excavates and carries the dirty ballast to the top of the unit. There it is deposited on a conveyor which carries the material to double-deck vibrating screens where dirt and fine particles are removed and placed on a system of conveyors which can be swung to waste the dirt on either side of the track or into cars. Cleaned ballast is dropped immediately behind the digging chain so as to provide a clean layer of ballast for the ties to rest on.

If the excavated ballast is all to be wasted, rather than cleaned, the material is diverted directly from the first conveyor to the second conveyor, thereby bypassing the vibrating screens. The ballast-cleaning unit is powered by direct-current motors which are supplied by two General Motors diesel generators rated at 75 kw each. Locomotion is provided by traction motors mounted on the trucks of the power car and providing a travel speed of 35 mph. *Matisa Equipment Corporation, 224 S. Michigan ave., Chicago* •

Molded Steel Cab

An all-weather cab consisting of a molded steel shell is now available for all models of the Michigan tractor-shovels. The cab is designed for easy field installation and features all-around and overhead vision through safety glass windows set in rubber moldings. Glass in the overhead window is tinted to eliminate sun glare.

The rear section of the cab is mounted on a track which enables it to roll freely back and forth. This section can be removed in five minutes and will lock open or closed in any position. A quick release mechanism frees the locks when the cab is pulled back to open. Windows in the rear section are of the sliding type. The cab unit weighs approximately 275 lb. A windshield wiper is standard equipment and a heater and defroster unit is optional. The interior is sprayed with an insulating compound to deaden noise. This new cab is an addition to other styles of cabs for the Michigan line. *Construction Machinery Division, Clark Equipment Company, Buchanan, Mich.* •

Lift Truck Carries Operator

A battery-powered lift truck on which the operator stands—permitting instantaneous mounting and dismounting, which tends to speed movement of goods and materials—has been made available. The truck has speeds

up to 6 mph with no load, and 3½ mph with load. All wheels are mounted on Timken tapered bearings. Forward and reverse push-button controls, plus hand-operated brake controls for operation with either hand, are in the steering handle. The truck is built with 4,000-lb and 6,000-lb capacities. *Barrett-Cravens Company, 628 Dundee road, Northbrook, Ill* •

Electric Switch Lamps

These new electric switch lamps and battery boxes have cast-iron bodies. A socket, to fit on the tip of the switch shaft according to the purchaser's standard, is bolted to the bottom of the lamp body.

Receptacles can be furnished with either single-contact or double-contact bayonet candelabra base, or the medium screw base. The electric-type lenses, (i.e., pure red with an incandescent electric lamp) have 5-deg horizontal spread, and 2.5 deg vertical spread, approximating the spread of an optical lens with an oil flame. For use on curves or in yards where greater width of beam is required, 30-deg horizontal spread lenses are recommended. The Type 1870 lamp uses 4½-in. red lenses and 4⅛-in. green lens. The Type 1876 uses a 5⅜-in. red lens, and a 5-in. green lens. With different sizes for red and green, installation of improper color is prevented.

Where the switch lamp is fed from a primary battery, the manufacturer has developed a battery housing to be set in the ground alongside the switch tie. This housing is made of No. 16 gage sheet steel with continuous weld seams. The cover is designed to provide ventilation. The primer coat is red oxide. The inside is coated with Victolac No. 11 insulating paint, and the outside with protective mastic coating. Metal accessories are plated. This housing, with adjustable platform, will accommodate any of the following batteries: one Edison No. 2SJ1 carbonaire battery; one National Carbon Eveready

T-2600 air cell battery; or two Carbone No. 500 cells.

For use in yards or other places where switch lamp is to be fed on a-c power, a small transformer is mounted in a junction box on a riser to be set in the ground near the switch tie. This transformer, fed from a 115-volt, 60-cycle source, will feed from one to as many as four switch lamps rated at 10-volt, 0.3 amp. *Western Railroad Supply Company, 2428 South Ashland ave., Chicago 8* •

Crawler-Mounted Track Liner

A crawler-type tractor with a hydraulic attachment for lining track has been announced. Known as the Line-Master, the unit is reported to be capable of lining in excess of a mile of track per day with an operator and one man for sighting.

The unit is entirely hydraulic in operation. Travel control is provided by an independently controlled hydraulic motor on each of the crawler treads. A lining head is carried on the front of the machine and can be raised or lowered by hydraulic cylinders.

When lining, the machine is spotted with the lining head over a tie crib at the location where a throw is to be made. The head is then lowered into the crib and anchored by a hydraulically rotated spud which is inserted into the crib. Horizontal-acting hydraulic cylinders then push against the base of the rail in either direction to make the required throw.

The Line-Master does not obstruct the view along either rail during the operation, and throws from 1/16 to 6 in. can be made. Because of the method used to anchor the machine, the track is not raised during a throw. The manufacturer states that the machine will line track which has not been surfaced. *Railway Maintenance Corporation, 526 Oliver bldg., Pittsburgh 22* •

Pressure-Sensitive Film Tape

A new pressure-sensitive film tape for industrial marking, labeling and decorating is now on the market. The product, "Scotch" brand colored film tape No. 850, is made with a polyester film backing described as superior to most existing plastics in heat and chemical resistance. Made with red, black or white color pigments in its adhesive, the tape is said to possess excellent resistance to acids, alkalies, ketones, hydrocarbons, esters and other common solvents, as well as excellent resistance to all weather conditions.

The tape is available in ¼- to 23-in. standard widths on 72-yard rolls. Wider widths and longer roll sizes can be made on special order. Sample ¾-in. by 5-yard rolls are available on request. *Minnesota Mining & Manufacturing Co., 900 Fauquier st., St. Paul 6, Minn* •

General American's Airslide® Car Fleet is Rolling!

NOW MANY MORE DRY, GRANULAR AND POWDERED MATERIALS CAN BE SHIPPED IN BULK

Shippers using Airslide cars have transported commodities never successfully handled in bulk before

General American's new Airslide car fleet has started operation after months of actual working tests. New cars are coming out of its shops for companies who have actually tested them—found their value. These facts were considered *before* the cars were leased:

1. Airslide car shipping costs less.

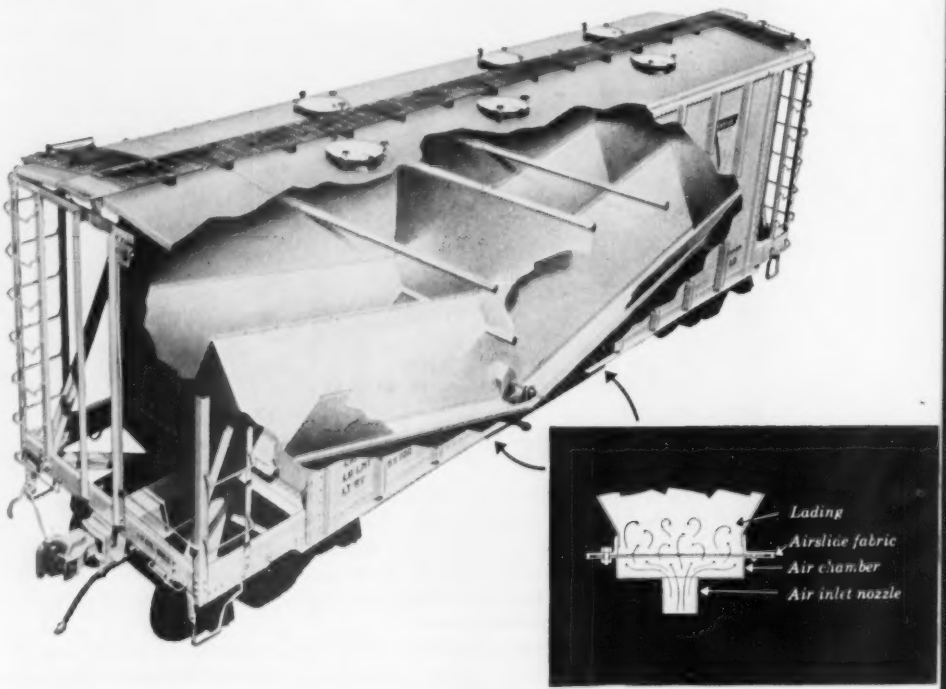
2. High or low density materials can be successfully loaded, carried and unloaded.

3. The expense of individual, small-unit containers can be eliminated.

4. Airslide cars can be loaded by gravity and unloaded into any conveying system.

5. Ladings are protected against shrinkage and leakage with minimum possibility of contamination.

6. General American can service Airslide cars in its own shops throughout the country just as GATX tank cars are serviced.



AIRSLIDE, a trade mark of the Fuller Company, Catasauqua, Pennsylvania

FIND OUT ABOUT CUTTING YOUR SHIPPING COSTS

General American's engineers will work with your traffic and production engineers to see how you can get the advantages and savings of bulk shipping. Write for information.

UNLOAD INTO ANY CONVEYING SYSTEM

The Airslide in car quickly and easily "fluidizes" the lading for complete, speedy unloading. With approximately one pound of air pressure, the lading is aerated and flows quickly and evenly to the discharge points.

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GENERAL AMERICAN TRANSPORTATION CORPORATION

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OFFICES IN PRINCIPAL CITIES

Railroad Policy Takes a Big Stride

The railroads have made history in the past couple of weeks in the area of railroad industry policy. Railroad leaders, after much reflection and discussion, have registered great advances in candidly recognizing the nature of the serious difficulties which confront the industry—and in calling for appropriate remedies. The documents in which this progress is recorded are the AAR statement to the advisers to the Cabinet Committee on Transportation (last week's Railway *Age*, page 7); and the October 25 speech of President J. M. Symes of the Pennsylvania (*Railway Age*, November 1, page 11).

The AAR statement includes a reiteration of the position heretofore taken by the railroads on many questions of governmental treatment of competitive transportation—but, beyond that, the statement goes much further than any previous "official" declaration in calling for reduced regulation. Generally speaking, the statement accepts the principle that the best way to equalize competitive conditions in transportation is to deregulate the railroads, rather than increase regulation of the "other fellow." It gets down to cases in calling for relief from the operation of profitless passenger services and other state-imposed burdens; and seeks a more truly economic and foresighted policy by the government as a purchaser of transportation (e. g., by the Post Office Department).

This declaration might, possibly, invite criticism in three particulars, viz., (1) that it gives only slight recognition to serious and growing competition from private transportation; (2) that it insists, soundly but perhaps idealistically, that the way to end the difficulties arising from transportation subsidies is to abolish them all; and (3) that it fails to make the perfectly justifiable claim that railroads be compensated by federal and local governments for services to these governments (e. g., commuter service and stand-by facilities for national defense).

Actually to advance such criticisms as these would, however, be an injustice to the many devoted and able railroad men who worked so hard to get a statement on which industry leaders could agree. Those inclined to find fault should, first, give due credit for the degree of progress which the conferees achieved—before they deplore the inability of even the ablest men to build Rome in a day.

Mr. Symes' speech was the opinion of one man—not of a committee—hence it did not have to be moderated to exclude views not shared in virtual unanimity by a group. Even those who do not agree with all the measures Mr. Symes favors must admire his forthrightness. There is no reason whatever why railroad men should reveal only those opinions which they hold in common with all other railroad men.

After all, for the railroads adequately to hold their own in competition, the one necessary condition is equality of treatment. When, in addition, they insist upon the achievement of this equality on their own terms (viz., abolition of all subsidies)—what they are really asking for is acceptance of a political and social philosophy (i. e., strict anti-socialism) which practically all other business, agriculture, and industry have quite plainly discarded.

In a recently published book, "The 20th Century Capitalist Revolution," A. A. Berle, Jr., calls attention to the development of "a mixed system in which governmental and private property are inextricably mingled." He insists that this hybrid arrangement is not "creeping socialism" but "galloping capitalism"—presumably on the evidence that those industries which are saddled astride the public treasury are getting ahead a lot faster than those that aren't.

As far as the railroads are concerned, there are many of them which have received government money for grade crossing elimination—for structures which have so clearly become railroad property that railroads are being assessed taxes on them. If railroads can reasonably take public money for such structures (as no one doubts they should, since they are for public rather than railroad benefit), then how would acceptance of government compensation for other railroad plant, equally for public rather than corporate benefit, involve any compromise with principle?

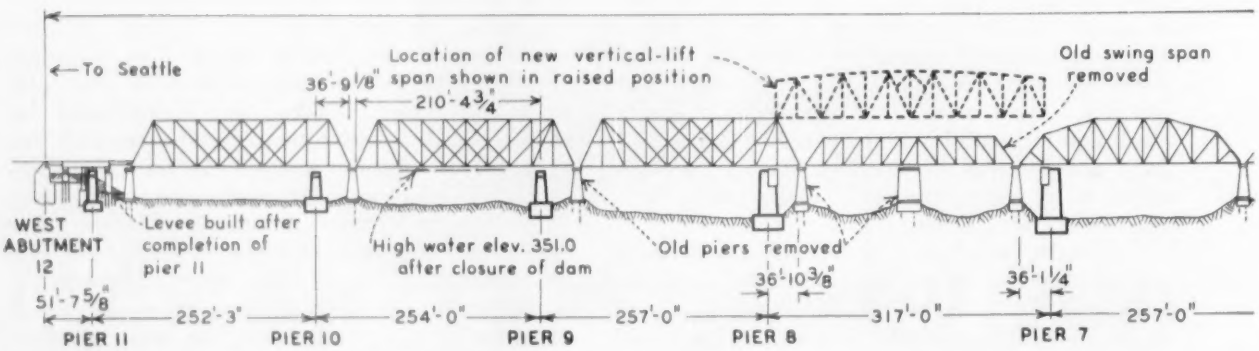
This paper respects the high-minded integrity of the railroad men who disagree with this view, but we believe it should be frankly discussed; and we welcome Mr. Symes' candor in bringing the question out into the open. As for the frequently expressed fear that industries the government helps it may "take over"—Is there any industry up to its ears in "government aid" which is suffering even a fraction of the government interference that is afflicting the unaided railroads?

VERTICAL-LIFT SPAN, supported on barges, is being floated into position.

McNARY DAM RESULTS IN

A Tough Bridge-Raising Job

Northern Pacific structure across the Columbia river, 2,700 ft long, elevated 4 ft on new piers built on same alinement



OLD FIXED SPANS were re-used, but shifted longitudinally onto new piers and then raised as required. Spans on each

By J. E. HOVING
Assistant Chief Engineer
Northern Pacific, Seattle

When the water level is substantially and permanently raised at a long truss bridge, how can the existing structure be kept in service on the same alinement and yet be made to conform to sound engineering concepts of bridge design and construction?

The question was faced by the Northern Pacific as a result of the construction by the government of McNary dam in the Columbia river, resulting in a 23-ft rise in the river at the railroad's bridge near Pasco, Wash. The problem was solved by constructing new concrete piers, shifting the existing spans 41 ft longitudinally, and then raising them as necessary to meet the new requirements.

The NP's single-track Columbia River bridge at Pasco, carrying the road's main line between St. Paul and Seattle, was completed in 1888. It consisted of nine 250-ft through-truss spans, a 237-ft center-mounted swing span, and two 50-ft girder spans at either shore, a total length of 2,669 ft. In 1905 and 1906 the superstructure was reinforced and rebuilt to carry heavier locomotives. Since then, and until the recent project was undertaken, only periodic maintenance work was done on the bridge.

Effect of Dam on Bridge

As a result of the construction of McNary dam the reservoir pool level has a normal water-surface elevation 23 ft higher than the previous ordinary water-surface elevation, and during flood periods the water surface will be several feet higher than the extreme stage for which the bridge was originally designed. Because of the additional buoyancy and other adverse effects of the higher pool elevation on the existing piers it was considered necessary either to strengthen the old piers, or to construct new ones. Also, to maintain the same flood-time clearance under the bridge it was necessary to raise it 4 ft 2 in.

Various methods were considered for altering the bridge to meet the new situation, but all of them were discarded in favor of the plan for building new piers on the same alinement and shifting the existing trusses onto them, and then raising the spans as necessary. The plan adopted also called for replacing the existing center-bearing swing span with a 307-ft vertical-lift span (see drawing).

Contracts for both the substructure and the superstructure work were awarded to the Kansas City Bridge Company and the Massman Construction Company, Kansas City, Mo., on the basis of low bids. Work was started by the contractor on the substructure work on May 12, 1952, and the superstructure work was begun on April 1, 1953.

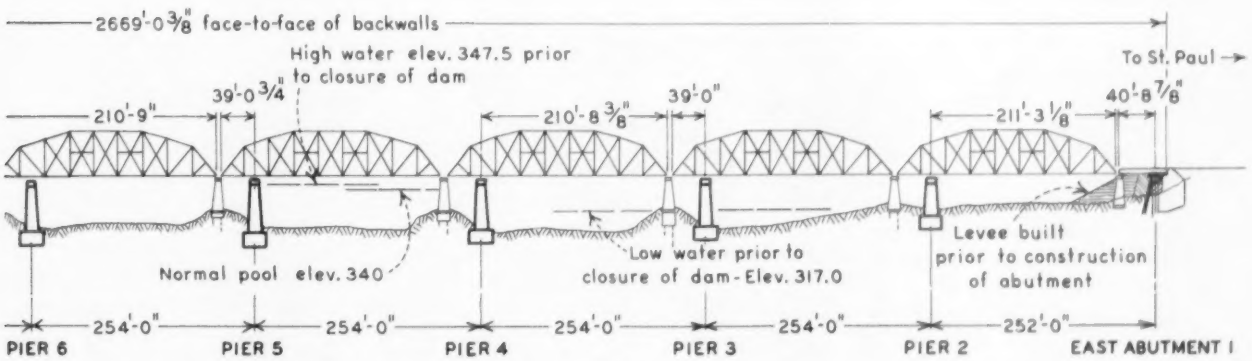
Ringold Formation Encountered

The stream bed at the bridge site consists of a layer of sand and gravel 3 to 15 ft thick, which overlays what is known as the Ringold formation. This is a brittle, blue-gray, clay-like material, which is firm and non-plastic and which can be excavated with air spades or similar equipment without blasting. It was found that, as a rule, the Ringold formation would stand vertically without sloughing, so that at some of the piers it was possible to excavate the material on the neat line of the pier footings and pour concrete in the excavation without the usual forms.

The original plan of construction provided for lift-span Piers 7 and 8 (drawing) to be built using pneumatic caissons, while the open-cofferdam method was to be used for Piers 2, 3, 4, 5, 6, 9, 10 and 11. The use of pneumatic-caisson construction at Piers 7 and 8 was necessary due to the proximity of the existing end piers of the old swing span. As the bases of these new piers were larger than those of the other piers, excavation operations would necessarily have to be carried out very close to the old pier footings and consequently would endanger the stability of the old piers if the open cofferdam method were used. With the use of pneumatic caissons, excavation operations can be carried on with very little disturbance of the river bed outside the area of the caisson. For Piers 7 and 8 the caissons were of steel construction 36 ft wide and 72 ft long, high enough to provide a working space of 7 ft and with sides so made that a removable timber cofferdam could be attached.

When work was started on Pier 3 for open-cofferdam construction, so much difficulty was experienced in driving steel sheet piling through the sand and gravel of the river bed that it was decided, as a means of speeding up the work, to use the pneumatic caisson method for Piers 3, 4, 5 and 6, in addition to Piers 7 and 8.

All of the substructure work was carried on without



side of the swing span were moved in opposite directions to provide larger opening for new vertical-lift bridge.

HOW SPANS WERE SHIFTED . . .

1 SKID FRAME arrangement has been installed at each end of span to bridge openings between new and old piers.

2 TEMPORARY girder span, previously installed to span between new and old piers, is removed by derrick car.

3 TRUSS SPAN on way to new piers. Note men placing rollers on skid rails. Same process is going on at other end.

4 SPAN AT LEFT has just been shifted; 40-ft temporary girder span will now be inserted to fill gap until moving of next span.

any serious delays to trains. Also, there was no evidence that the old piers lost any of their stability during construction of the new piers.

Three Major Steps Remained

With the completion of the concrete piers the following major work remained to be done:

(1) Move 9 steel trusses, each 250 ft long and weighing 500 tons, 41 ft longitudinally to new piers.

(2) Replace the old 237-ft swing span with a 307-ft vertical lift span.

(3) Raise the entire bridge structure 4 ft 2 in and raise the approaches correspondingly.

All of this work was completed under conditions permitting maintenance of railroad traffic with as little delay as possible. Fortunately, train schedules permitted a train-free period between 11 a.m. and 3 p.m. so that, by carefully planning the work, there was very little if any train delay.

The procedure for moving the 500-ton truss spans was similar in each case. The first one to be moved was the one at the west end of the bridge. A temporary bridge structure, called a "skid-frame," was erected at each end of the truss, spanning the 41-ft openings between the old and new piers. Longitudinal skid rails were placed on top of the skid frame. Previously, skid rails and rollers had been placed under the bridge shoes to line up with the rails on the skid frames. A block-and-tackle arrangement was placed for use in moving the span 41 ft endways. Prior to the time set for moving the span arrangements had been made with the train dispatcher's office at Spokane for a 4-hour train-free period between 11 a.m. and 3 p.m.

A locomotive crane and a derrick car were used in the moving operation. The locomotive crane arrived first and was stationed on the approach at the west end of the bridge. The derrick car came out next and proceeded to remove a temporary 40-ft girder that had previously been installed at the west end of the westerly

truss span. The locomotive crane was then coupled to the block-and-tackle arrangement and movement of the truss span was begun. The actual moving time for the truss span was 20 min.

In the meantime the derrick car had moved to the east end of the truss span with the temporary girder for placing in the opening at that end. This was accomplished soon after the opening was made available, and the bridge was again ready for traffic at 2:15 p.m., or 3 hr later.

A similar procedure was followed in moving the other spans except that it was possible to cut down the track out-of-service time to as low as 1 hr 45 min. As the moving of each span was accomplished preparatory work was begun for the next move by dismantling and re-erecting the skid-frame structure.

When the span moving had been completed all of the fixed truss spans were resting on the new piers while the swing span remained in place on the old piers. A temporary 40-ft girder span extended between each end of the swing span and the adjacent fixed-truss span on the new pier.

Raising Gives "Saucer" Effect

The original plans called for placing the lift span as the next step, but non-delivery of critical steel sections to the fabricator made a change in plans necessary. Instead of raising the bridge uniformly for the total raise of 4 ft 2 in, it was decided to raise the first three spans at the east end to the full height and raise the others on a "run-off" down to the swing span, and raise the west end of the last fixed-truss span to full height and incline from there down to the swing span. For a long time there was a "saucer" shaped type of structure, but apparently with no adver effects on train operation.

With the raising of the bridge at each end it was possible to raise the approaches and do other miscellaneous work attendant to the raising operation.

The truss spans were raised in 10-in. increments. Hydraulic jacks of 115 tons capacity, four to a span end, were used in this work.

The full 10-in. raise was obtained by raising 1 to 1½ in. at a time and then placing blocking under the bridge shoes until the other side of the span had been raised a like amount, and in addition raised 1 in. or 1½ in. above the other end. The full raise of 4 ft 2 in. was accomplished without incident.

Erecting the Vertical-Lift Span

The vertical-lift span, weighing 1,100 tons, was assembled on a temporary pile trestle placed downstream from the railway bridge on the east side. It was assembled as complete as possible on the erection trestle to cut down the time the bridge would be closed to navigation after the lift span had been placed in its final position. All machinery and control devices were installed to the extent possible prior to moving the lift span into its final position.

Four barges were used to take out the old swing span and the same number of barges were used to move the new lift span in place. The switchout of the existing swing span for the new vertical-lift span was accomplished on August 9, 1954. Monday was selected for the changeover operation as that day would cause the least disturbance to the handling of fruit trains from the Yakima valley. Twelve hours of train-free time were requested to begin at 5 a.m. Two scheduled passenger trains due to leave Pasco, which is east of the river, at 10:45 a.m. were detoured over the Union Pacific to Kennewick west of the bridge. Time freights which would normally cross over the Columbia river about mid-morning were run ahead of schedule, and by 5:15 a.m. of August 9 all trains scheduled to use the bridge had passed over it, and the switchout of the movable span could begin.

First the two temporary spans were removed. Pumps were then started on the four barges under the existing swing span and soon it was clear of the center-pin connection on the pivot pier. Two large river tugs were connected to the barges and moved the swing span downstream from its position in the bridge. When sufficiently clear of all downstream obstructions the span was moved to a temporary location on the Pasco shore for dismantling. The river tugs were then attached to the barges under the vertical lift span and, as the barges were unwatered, the lift span was raised free of its supports on the temporary construction trestle.

Movement of the span to the permanent location was accomplished without incident. When the span was in a position close to the bridge, cables through snatch blocks were attached to the lift span and to the locomotive crane and derrick car on the bridge for moving the span into final position. By noon the lift span was in position but still resting on the barges. By pumping water into the barges the span was lowered onto its bearings, after which the barges were removed. The tower-span girders were then installed and ties and rails were placed for track connections at the ends of the lift span. By 5:15 p.m. the bridge was ready for train traffic.

About a week's work was required to place the vertical lift span in operation.

Finishing Operations

The project required about two months more to complete. The work consisted of raising the six truss spans to the final height, the setting of the vertical-lift span to meet the final elevation of the truss spans, and the encasing in concrete of the steel grillages that were placed on the piers during the raising of the truss spans.

The consulting engineers for the bridge work were Howard, Needles, Tammen & Bergendoff. For the railway company, the author was in charge of the entire project, including the construction of new branch lines, rehabilitation of track, and other work required by the construction of McNary dam. M. O. Woxland, assistant engineer, was in charge of the bridge work. C. E. Ekberg, bridge engineer, St. Paul, reviewed and approved all plans prepared by the consulting engineers and handled all questions in connection with actual construction.

Harry Pyle was superintendent for the contractors and was responsible for the successful handling of this complicated job.

THE NEW CAR WILL GO wherever needed to reach every Southern employee who handles freight.

EVERY SEAT is a good one, in the car's 60-seat auditorium; the last 10 rows are slightly elevated.

LET'S GO TO THE MOVIES . . .

How To Fight Loss and Damage

Southern's new freight claim prevention theater car will carry careful handling message wherever it is needed

To carry to every yard, freight station and transfer on the railway the motion picture, slide film and discussion programs that help to spotlight and correct conditions that lead to freight loss and damage is the mission of the Southern's new freight claim prevention theater car, which was officially dedicated August 17 (*Railway Age*, August 23, page 5).

Completed at Hayne Car Shop in Spartanburg, S. C., and delivered to the freight claim prevention department at Chattanooga this summer, car S-2 soon got down to business there, at Birmingham, and at Atlanta in a tour that eventually will carry it throughout the 8,000-mile Southern system.

Every Seat Is Good

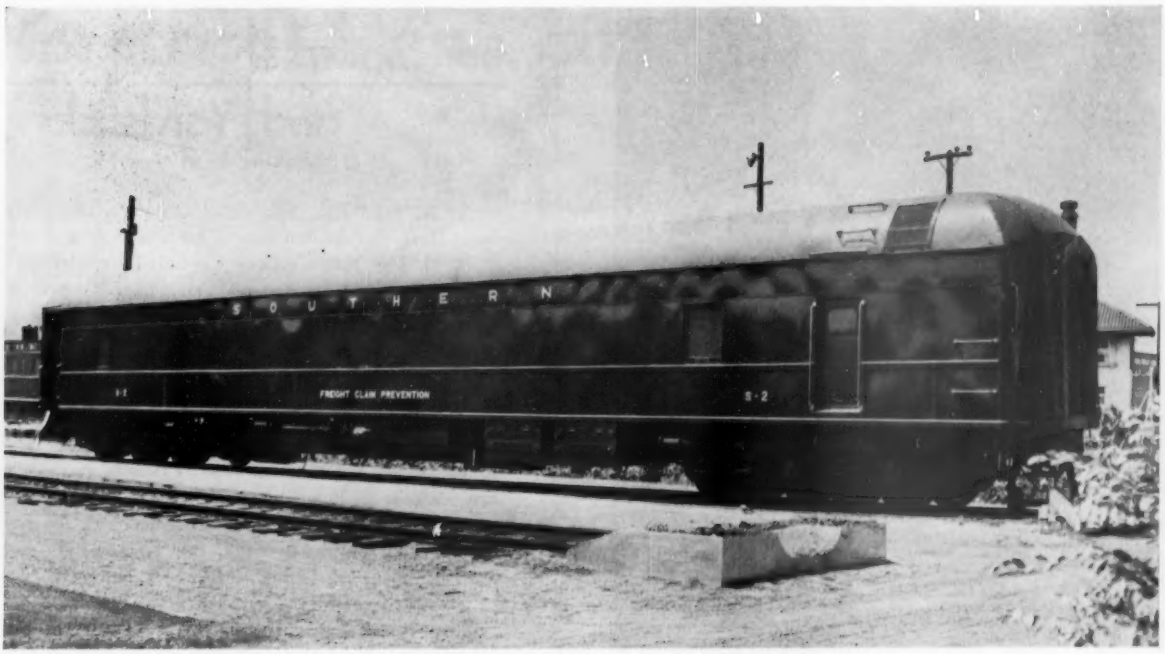
The heart of the car is its 60-seat auditorium. Taking a tip from designers of commercial motion picture theaters, the car planners had the last 10 of its 15 rows of seats gradually raised. As a result, a seat in back is as good as one in front.

For the talks and discussions that follow the film programs, the motion picture screen mounted on the front end panel of the auditorium compartment can be rolled up to uncover a blackboard. A public address system with a microphone at the speaker's stand and individual microphones plugged into the car wall at each double seat help insure every member of the audience a clear voice in the discussions.

At the rear of the auditorium, a raised compartment with storage space underneath has been fitted as a projection room. It is equipped with a sound motion picture projector, slide projector, radio, record player and tape recorder. A special storage cabinet holds the motion picture films with which the car is supplied.

Anywhere on Rails

S-2 has been designed to go wherever it is needed in the fight against freight damage. No rail siding is too remote, because the car has a diesel-powered generator and storage batteries to make it independent of outside power sources, though it can be plugged in on trackside power outlets where available. An oil heater for use when steam lines are not available and an air conditioning system for summer comfort enable S-2 to generate its own weather throughout the year. The car can move in freight trains as well as passenger trains if necessary, and it contains comfortable living quarters for freight claim prevention supervisors accompanying it.



S-2, THE SOUTHERN'S NEW FREIGHT CLAIM PREVENTION CAR, rebuilt from an old Pullman, is sufficiently self-contained to be usable anywhere on the system.

Meetings generally run a half-hour. They feature a motion picture or slide film that points up some of the possible hazards in a specific phase of freight handling and suggests some commonsense remedies to lessen the likelihood of damage. In the free-for-all discussion that follows, audience members swap ideas on the subject of protecting freight shipments—the railroad's "bread and butter."

Currently the car carries seven motion pictures and slide films on various subjects related to the main theme of "getting the freight through safely." Yard men see "A Job Worth Doing," "The High Cost of Carelessness" (both Southern produced films), and "The Freight Goes Through" (an Association of American Railroads release). Programs especially slanted to freight stations and transfers will feature "Serving the South Better," a slide movie recently prepared by the freight claim prevention department; "Johnny Goodjob in the Freight Agency"; "It's a Deal," produced by the New York Central, and "Ichabod," an AAR motion picture.

Southern claim prevention men are at work on a new slide movie highlighting proper methods of handling furniture, and expect to make considerable use of films produced by other railroads during future travels of S-2.

Freight claim prevention, they point out, is one of the most cooperative activities in an industry where cooperation among companies is a byword. Careful handling has to be everybody's business because one man's carelessness can destroy the good work of hundreds of others, not only on his own railroad but on others. There's nothing competitive about this—ideas, motion pictures, slide films are freely shared among railroads.

Visual education and discussion programs of the kind staged in car S-2 are no new departure in the Southern's fight against freight loss and damage. What is pleasantly new to J. R. Formby, assistant to vice-president, W. L. Eubank, superintendent freight claim prevention, and those who work with them, is the use of this new theater-on-wheels for presentation of motion pictures, slide films and round-the-car discussions.

INDIVIDUAL MICROPHONES at each double seat give every member of the audience a clear voice in discussions concerning ways to improve freight handling and reduce damage.

Freight claim prevention supervisors who used to stage their meetings in a corner of a freighthouse, in a yard office, in a borrowed passenger coach, or in the

STORAGE CABINETS for films are included in the projection room. Here, B. F. Newport, freight claim prevention supervisor, gets a film ready for showing.

safety car, now have a mobile fully equipped theater to carry their freight claim prevention message to every corner of the railway.

S-2 will go as far and stay as long as is needed to get that message across to every railroader whose care can save freight from loss or damage—yard crews, train crews, freight handlers, supervisors—in fact, just about everyone on the Southern who has anything to do with physical handling of freight.

Shippers to Participate, Too

Shippers, too, have a stake in the work of S-2, because theirs is a primary interest in seeing that their freight gets through safely. Wherever possible they will be invited to attend meetings on the car and personally tell the men who handle their freight on the Southern what freight loss and damage mean to their business and how it affects their relationship with the railway. On occasion, the car will be switched in at a customer's plant siding so that his loading forces can benefit from the railway's damage prevention education program.

Although the idea for a theater car of this kind had been germinating for several years, plans to build one did not become final until last year. Construction began as soon as final floor plans and details had been worked out. In design, the car resembles the Southern's safety car, with minor variations such as windowless walls and raised seats in the theater compartment, and different location of some equipment. Like the safety car, it was custom-designed on the frame of an old Pullman car.

Nobody on the Southern expects this car to be a magic wand, ending damage to freight in the wink of an eye. But they do expect the programs staged in it to be a real and effective help in encouraging safer handling of freight.

Benchmarks and Yardsticks

A. A. BERLE, JR.—who was one of the early New Deal "brain trusters"—has written a book entitled "The 20th Century Capitalist Revolution." Following along in the pattern of another New Deal professor, J. K. Galbraith (whose "American Capitalism: the Concept of Countervailing Power" was noted in these pages), Professor Berle has a lot of good to say about the modern large-size corporation.

He believes "big business" has, on the whole, done a fine job. "Its aggregate economic achievement is unsurpassed. Taking all elements (including human freedom) into account, its system of distributing benefits, though anything but perfect, has nevertheless left every other system in recorded history immeasurably far behind."

The big corporations, he says, are run by "tiny self-perpetuating oligarchies." The only real control to which these oligarchies are subjected, he asserts, is "the real, though undefined and tacit, philosophy of the men who compose them." While this statement will sound a little strong in the light of recent experience on the railroads, there is some truth in it when applied to large corporations as a whole.

The power these corporations have is, frequently, a lot more than they want. Mr. Berle cites the case of an electric company with government contracts and "security" problems, and with some employees who took refuge behind the fifth amendment, when asked if they were Communists. He discusses at length the legal and ethical problems—as well as the practical ones—confronted by the management in deciding whether or not to fire these employees.

It is not only on such domestic questions—but on international ones as well, where large corporations have foreign commitments—that corporate decisions have far more than mere business effects. That is to say, international relations are closely associated with corporate activities which traverse international boundaries. While Mr. Berle is greatly interested in corporate power and its remarkable progress toward developing a conscience, he does not say a word about the power of labor organizations—nor about the achievement of conscience by these organizations.

In the whole realm of corporate social responsibility, there is (in your reporter's opinion) no more noteworthy example than that afforded by the single-handed and public-spirited challenge by the Santa Fe to the acceptance of the "union shop." This thing is a threat to the freedom of all Americans, but of the hundreds of big companies which could have challenged it (and had an earlier opportunity), it remained for a railroad actually to assume the burden. J. G. L.

Electrical Men Talk Railroading

What transit systems can do for cities and immediate needs for diesel-electric locomotives discussed by the Land Transportation Committee of the American Institute of Electrical Engineers

Downtown real estate values in Toronto have increased as much as three times as a result of the building of the new Toronto subway. The flight of business to the suburbs has been checked and assessments on downtown properties have been trebled. One piece of land which was purchased for $8,000 by the Toronto Transit Commission as a parking lot before the subway was built, was sold after the completion of the subway for $100,000.

This information was given by J. G. Inglis, operations manager of the Toronto Transit Commission, at the Fall General Meeting of the American Institute of Electrical Engineers recently held in Chicago.

The subway was built, Mr. Inglis said, to dispose of a traffic paralysis which was creeping over downtown Toronto. Now that the subway is in service, it has demonstrated its ability to restore the downtown area to its rightful position as the heart of the city. It has provided a positive rebuttal, Mr. Inglis said, to those who urge provision of more facilities for the motor car as the only answer to traffic ills. It has proved, he said, that a vigorous transportation agency, alert to the varying needs of the area it serves, can face the future with confidence.

Wheel Slipping

The seriousness of wheel slipping, particularly as a cause of rail burns, was emphasized in a paper on diesel-electric locomotive wheel slipping, by R. I. Fort, electrical engineer, equipment, Illinois Central. He told of one railroad which had inspected 610 miles of track and discovered that there were burns on 23 per cent of the rails in the districts inspected. To replace the damaged rail would require 33,000 tons of rail, whereas the 1953 allocations for those sections totaled only 22,000 tons.

Rail burns, Mr. Fort said, may vary from the size of a 25-cent piece and a few thousandths of an inch in depth, to a length of three or four inches and the width of the rail head for deeper burns. These burns affect riding comfort and, more important, are a point at which wheels continually pound, causing a change in rail head grain structure which can lead to transverse fracture—a very serious matter.

Mr. Fort pointed out that most rail burns occur at standstill or up to about ¼ mph. At or above this speed, the grinding action of the slipping wheel is spread over a greater area and the local effect is minimized. The problem, he said, is first to detect the wheel slip, and second, to do something about it.

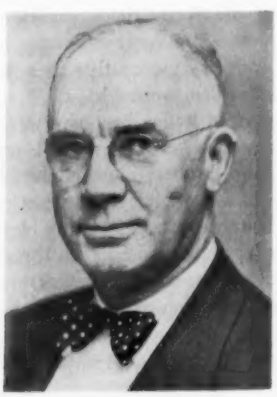
Maintenance Testing

Discussing maintenance testing of insulation resistance on diesel-electric locomotives, W. E. Kelley of the Pennsylvania described the schedule of inspection and repairs for road diesels and offered the following recommendations:

1. Additional methods and further development of present methods of testing electrical insulation are needed. A portable meter is needed for maintenance terminals, preferably one with a power supply and designed not to indicate grounds below a determined value of leakage current.

2. Standards should be set up for the use of d-c over-potential testing in connection with traction apparatus. This type of testing has been used extensively for large power apparatus, but almost not at all by manufacturers or users of traction apparatus. The nondestructive quality of this type of testing is appealing and with proper standards could prove effective for testing the actual circuits of diesel-electric locomotives, as well as individual pieces of apparatus.

3. The electrical maintenance design factors for diesels,



J. C. Inglis

R. I. Fort

W. E. Kelley

L. E. Legg

M. C. Swanson,* chairman, Land Transportation Committee, AIEE.

G. T. Bevan

stated in AIEE Paper 53-50, clearly point out the design features necessary so insulating materials will give satisfactory service with maximum life. For instance, the use of neoprene insulated wire for control circuits caused consistently low megohmmeter readings because of the distributed leakage peculiar to this type of insulation material. Adherence to good design practice will not only increase insulation life but will aid in the testing of insulation resistance.

Effect of Experience on Locomotive Design

Ways in which locomotive designs have been changed to meet the exacting requirements of railroad service were described by L. Elton Legg, electrical engineer, equipment, Chicago & North Western. He stressed particularly the damage which may be done to insulation by the high potential tests required by ICC Rule 253. These tests may cause a serious breakdown of insulation simply because of the presence of dirt or moisture which can be removed by drying or cleaning. He suggests that this rule should be modified.

One method of preventing damage caused by a-c high-potential tests is to use d-c testers instead. The direct current is not so apt to cause breakdown and when the d-c voltage is brought up gradually, the flow of current through the insulation will indicate a potential breakdown and permit the operator to stop the test before serious damage is done to the insulation. Drying or cleaning may then correct the difficulty.

Gearing for Diesel-Electric Locomotives

In a paper on gearing for diesels, G. T. Bevan of International General Electric Company stressed the importance of having traction motors large enough to permit the use of gear ratios low enough to make a locomotive suitable for both freight and passenger service.

Mr. Bevan said "two means of improving railroad operating efficiency are related to locomotive operation and performance. One is to obtain maximum locomotive utilization, and the other is to increase gross ton-miles per train-hour.

"Characteristics inherent in the steam locomotive prevented the exploitation of these two means to the fullest extent. The characteristics of electric drive, as applied to diesel-electric locomotives, are more favorable. Consequently, the wide application of this type of motive power has enabled the railroads to advance far toward maximum locomotive utilization, and to materially increase their gross ton-miles per train-hour ratio.

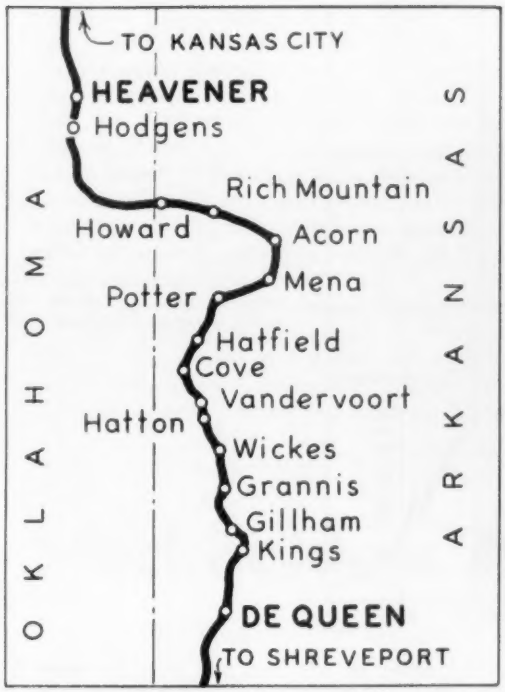
"Within the limits of engine horsepower, the hauling capacity of a diesel is determined by (1) weight on drivers, (2) traction motor rating, and (3) motor gear ratio. The weight on the drivers of a locomotive permits it to haul a specified tonnage, depending upon the adhesion characteristics between the wheel and rail. The traction motor rating allows the locomotive to pull this tonnage at a definite speed for a specified length of time, depending upon the profile of the line and operating conditions. The traction motor gear ratio permits the locomotive to be operated in certain classes of service.

"The first two factors play a most important part in determining the gross ton-miles that a locomotive with a given horsepower rating can produce per train-hour. The third largely decides the way in which the locomotive can be applied, since locomotive gearing offers a means of utilizing horsepower in the desired combination of speed and tractive effort. The larger the traction motor, the more opportunity there is for using higher speed gearing with a minimum sacrifice of tractive force. . . .

"In the earlier days of diesel-electric locomotive design and application, traction motor gear ratios were selected that would best suit the locomotive to a specific type of service. As engine horsepower and traction motor capacity have increased, it has become more and more desirable to select gear ratios that will permit greater locomotive utilization by enabling the same locomotives to be employed in either freight or passenger service and, in many instances, in switching service.

"The benefits resulting from this change are threefold. The number of locomotives for a given assignment is reduced. The operating costs, which are directly affected by locomotive mileage, are decreased. The requirements for maintenance facilities are likewise reduced. All of these results contribute to more efficient railroad operation."

*Application Engineer, American Locomotive Company



POWER OPERATED sidings could not be spaced equally because of the grades.

THE POWER SWITCHES save time when trains are entering or leaving sidings on grade.

How CTC Speeds Trains on Grades

Kansas City Southern saves time on 95 miles of single track over the Ouachita mountains where grades are as long as 18 miles and up to 1.8 per cent

On 95 miles of single track traversing heavy mountain grades between Heavener, Okla., and DeQueen, Ark., the Kansas City Southern has installed centralized traffic control as a means of increasing track capacity and reducing train delay.

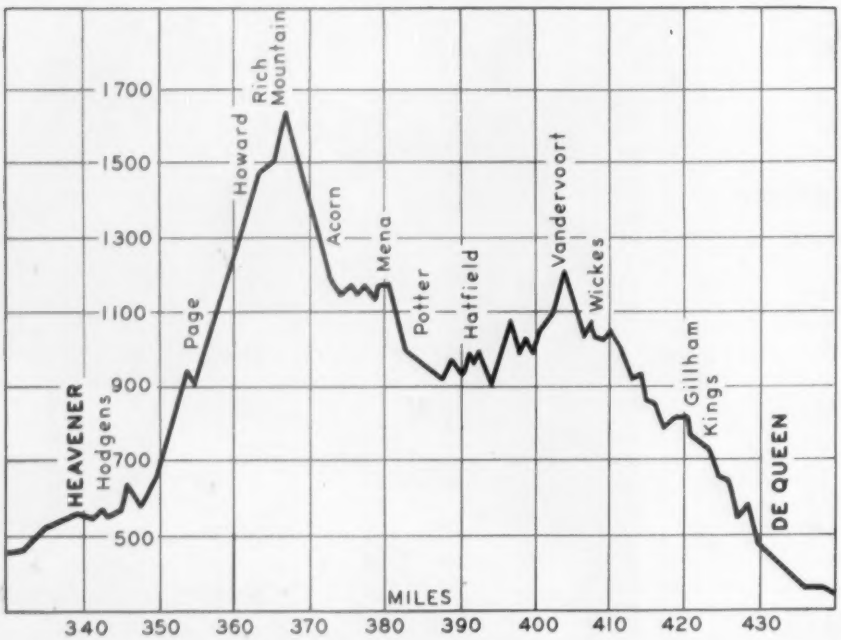
No signaling was in service in this territory; the siding switches were hand-thrown, and train movements were authorized by timetable and train orders. Now, the new power switch machines and signals at sidings are controlled by the CTC operator so that trains enter or leave without stoppage, and train moves are authorized by signal indications so that meets are made on close time, in many instances without stopping, which is especially important on account of the grades.

The daily schedules on the Heavener-DeQueen section include six passenger trains, two fast merchandise trains, four manifest freights, and a local freight southward three days, and northward three days each week. Extras are operated so the number of trains varies from a minimum of 15 to a maximum of 20 to 25 daily.

The "Southern Belle," each way daily, is a modern, fast overnight passenger train between Kansas City and New Orleans, making 873 miles in 18 hours. Also, the KCS emphasizes fast freight service. The "Merchandise Special," No. 77, which leaves Kansas City at 9:45 p.m., gives second morning delivery at Texarkana, Shreveport, Beaumont, Lake Charles and New Orleans, as well as second morning arrivals at Houston and Dallas.

Each of the 6,000-hp, 4-unit diesel locomotives used on through freight trains is rated at 4,350 tons south between Heavener and Rich Mountain, where the overall ruling grade is 1.5 per cent; and at 4,700 tons northward between DeQueen and Rich Mountain, where the ruling grade is 1.35 per cent. The speed limit for passenger trains is 58 mph, and for freights the limit is 48 mph between Heavener and Mena, and 40 mph between Mena and DeQueen, except that the limit is 48 mph for No. 77. The "Merchandise Special," with up to 4,350 tons, can make the 95 miles either way between Heavener and DeQueen in about 3 hours and 15 minutes, providing no time is lost in meets.

The 6 passenger trains and 6 through freights are scheduled to make a total of 12 meets each day at sidings between Heavener and DeQueen. Even a few extra trains increases the number of meets rapidly. When train movements were authorized by timetable and train order, superiority was designated. Because many of the sidings are on grades, the trains, when stopping and starting, lost considerable time in operation of hand-throw switch stands at sidings. If some train lost more time than expected, other trains were



GRADES are practically continuous for the entire 95 miles between Heavener and DeQueen.

In the 95 miles between Heavener and DeQueen, the KCS goes over the main range of the Ouachita mountains. At Stapp, 11 miles south of Heavener, the grade begins; in the 18 miles on up to the crest at Rich Mountain the line rises from 600 ft elevation to 1,650 ft. This section includes continuous approximately 2½ miles of 1.2 per cent grade; 3½ miles of 1.38 per cent, and 1½ miles of 1.5 with a short compensated grade of 1.86 per cent near the crest. Thence south, the descending grade is a maximum of 1.35 per cent, with several breaks, and a hump at Vandervoort. The elevation at DeQueen is 500 ft, and it goes on down to 300 ft at Winthrop, 18 miles further south. The 95-mile Heavener-DeQueen section includes a large percentage of the long, heavy grades on the entire KCS lines.

needlessly delayed because the dispatcher could not get information, or could not issue new orders in time to advance other trains.

Inferior trains were required to clear the main track at least 10 minutes ahead of the time for a superior train. Trains either southbound or northbound were required not to leave Rich Mountain within 15 minutes after the departure of a train in the same direction. Compliance with these rules consumed considerable time. On this 95 miles of heavy grades, the problem, therefore, was to minimize the number of train stops and the standing delay time so that trains could keep moving at the maximum speeds consistent with grades and tonnage. These desired results have now been accomplished by the centralized traffic control.

The reduced number of train stops under CTC operation should materially minimize the chances of draw bar failures that are likely to occur in any territory involving heavy grades and tonnage trains. If trains are received behind schedule, they can be given preference so that they make up time. Extra trains can be handled more readily without causing delay to scheduled trains. This is true because the CTC operator can see, on his control board, the position and progress of each train; he can control the switches and signals to advance trains for close meets, as well as give preference for uphill trains to hold the main.

On this district, the sidings are not spaced equally, simply because they were located (where possible) at level spots or breaks in grade, so that the difficulty of stopping and starting trains, when entering or leaving such sidings, would be minimized. The distance from the south end of one siding to the north end of the next varies from a minimum of 2½ miles between Gillham and Kings; to a maximum of 11 miles between Wickes and Gillham.

The sidings at Hodgens and Vandervoort are on 0.5 per cent grades; Howard is on 1.15 per cent; Potter is on 0.4 per cent; and Kings is on 0.2 per cent. Sidings at Rich Mountain and Mena include the crest descending grades both ways. The siding at Gillham is on a short level section between grades. Sidings at Page, Acorn, Wickes and Hatfield are on short sections of rolling grades between long grades.

As part of the CTC project, new No. 16 turnouts, with 30-ft points, were installed at both ends of twelve sidings, and at the south end of Heavener and north end of DeQueen. These 26 power switches, and the signals for authorizing train movements at these switches, are controlled by the CTC operator at Mena.

Other short sidings, not ordinarily used for meeting or passing of trains, are at Cove, Hatton and Grannis. As part of the CTC project, electric locks were installed on the hand-thrown switches at these short sidings, and at 11 other main track switches to industry spurs.

The entire CTC territory is controlled by the machine in the office at Mena. On the illuminated track diagram, a red lamp repeats the track occupancy of each switch detector section. On the line representing the main track between two sidings, there are two track-

occupancy lamps, each of which repeats approximately half of the siding-to-siding distance. By means of these two separately controlled lamps, the dispatcher knows when a train is halfway between sidings.

At the ends of sidings the signals are located in accordance with conventional practice. An unusual feature, however, is that main track station-leaving signals between the main track and siding are dwarfs, rather than high signals. This use of dwarfs avoided the expense of moving the siding over to 20 ft centers to provide clearance for a high signal.

As a general rule, the intermediate signals are double locations. Three such doubles are located on the 10 miles between sidings at Hodgens and Page; three on the 10 miles between Wickes and Gillham; two on the 8½ miles between Hatfield and Vandervoort; and three on the 6½ miles between Vandervoort and Wickes. On the shorter siding-to-siding sections, ranging up to 4½ miles, there is only one intermediate double location. Between Potter and Mena there is an ascending 1.35 per cent grade northward, and in this section of 4½ miles there are two northward intermediate signals and one southward. Because trains run slower up the hill, the second northward signal allows a second northward train to enter the siding-to-siding block.

This centralized traffic control was planned and installed by KCS forces under the direction of C. F. Grundy, signal engineer. The field construction work was under the supervision of R. E. Woodward, signal foreman, and of C. K. Woodward, signal supervisor. The principal items of signaling equipment were furnished by the General Railway Signal Company.

Stockholders Are People

Management upheavals seem to be occurring with increasing frequency, sometimes even in the face of regular dividend checks—A public relations counselor suggests why, and proposes a course of preventive action

By HOWARD G. MAYER

Stockholder revolutions have been going on throughout the history of modern business, but within the past two or three years they have captured the imagination of the public and the widespread consideration of the men who run businesses for shareholders. The experiences of the New Haven, the M&StL, and the New York Central in the past year have put the spotlight on railroads, but theirs are not unique experiences in American business. Management upheavals are occurring in many businesses with increasing frequency.

There has prevailed a psychology of isolation among officers and boards of directors—a false security of reasoning that "it couldn't happen to us." But it can happen, and even where stock is closely held some firms have had bitter experiences at the hands of stockholders who have voiced their grievances through the courts, through financial pressures, or through the public prints.

What kind of person is the stockholder? The question suggests an observation made recently by an exchange professor from the University of Chicago who had been living in Germany for a year. He was asked what was wrong with the Germans and he replied: "It's simple. They're people."

That's about what we find when we attempt to define stockholders. They are people and they act and react just as do other human beings. They invest in what they are told are "securities" and that probably is uppermost in their minds at all times. How secure is my original investment? How assured are the dividends? Is there any guarantee of appreciation of my investment? Or increase in the dividends?

It is interesting to note that these same considerations prevail whether the shareholder be a person of modest

Howard G. Mayer, chairman of the board of Mayer & O'Brien, Inc., public relations counsel, and a director of Public Relations Management Corporation, has handled railroad public relations for close to 20 years. Currently his firm serves as counsel for two Class I roads. It has acted as public relations consultants in a number of proxy contests, including a recent one resulting in replacement of a railroad management. The firm also represents clients in many industrial and commercial fields and the observations set forth in this article are drawn from experiences involving a number of varied types of publicly owned businesses.

means dependent on the income, an investment trust, a banker, or an officer or other employee who had invested in his own company. He wants assurance—repeated assurance—of this security. How is this to be accomplished?

There is no more powerful propaganda in behalf of management than a regular dividend check. An "extra" or increase in return from time to time helps materially, while a steady increase in the trading value of a security gives even further assurance. But there are many firms that can offer these palliatives (if such they may be termed), and still there is the threat of stockholder rebellion. What is missing?

It's information.

Stockholders want to know all kinds of things about companies in which they are interested. What is the company doing *now?* What are its plans for the future? Who are the people that run the company? What is their stake in the venture? Do their interests parallel those of the stockholder? What is their standing in the business community? These—and many more things. Nor is the appetite for such information a temporary one. It persists as long as the investor maintains a financial interest in a business.

How is such information disseminated to the best advantage of the company? There are many recognized techniques that answer the need, but it would be safe to say that the following procedures are fundamental:

1. Meet the stockholder face to face. Encourage him to attend annual stockholder meetings and when he gets there, see that he is treated as one of the owners of the company. Management need not wait for once-a-year contact. The executive officers of many corporations are meeting with shareholders at regional gatherings designed to bring together groups of investors who are too far from the site of the annual meeting to make the trip. A report is made and questions are invited.

Another approach is the "open house." The shareholders are invited to inspect the general offices or shops, to see a new structure, or visit a new train. There are numerous occasions on which such an event can be staged.

2. Write him frequently and frankly. Stockholders are never too busy to hear what is happening to their investments, but such communications should be terse and interesting. They might cover the following subjects:

a. Letters of welcome when investors first become owners of stock.

b. A fully detailed annual report written simply and presented attractively.

c. A message along with each dividend check.

d. A quarterly letter covering the past three months of activity even if there is no dividend.

e. A letter covering the agenda of the annual meeting for the benefit of those who do not attend.

f. A letter to stockholders explaining any important action taken by the board which may be of major interest to the owners (plans for refinancing, purchase of important properties, etc.).

g. Stockholders can be a source of business. Send them a reminder that the traffic department would be glad to follow-up any shipping leads.

h. And what if the general picture is not encouraging? Give the shareholder the facts. He'll have a lot more confidence in the management if he feels he knows what's going on than if he is made to feel that he is being neglected and kept in the dark while management uses his invested funds. The importance of communicating with the shareholders under such circumstances cannot be overstressed, and as in the case of all such communications, it is the way in which the facts are set forth that makes or shakes confidence.

i. Answer stockholder inquiries fully and promptly. If proxies are not sent in, personal letters should be sent reminding them of such oversight.

j. And finally, when a name is dropped from the stockholder lists, a letter can express regret and hope that the person will become a shareholder again at some future date.

3. Direct a goodly portion of publicity to stockholders. If the advertising budget permits, there may be wisdom in addressing shareholders through certain media. On the other hand, information of a general nature, but of special interest to shareholders, should be released regularly to the press, including the financial press, railroad securities' analysts, investment groups, and brokerage houses. Occasionally reprints of such advertising or publicity should be sent to shareholders to indicate the recognition being given their property.

To what does all this add up? It's simply a matter of letting the shareholder know what's going on in his company with a resultant confidence and pride in his investment.

This satisfaction on the part of shareholders is reflected daily in the so-called "popular" and "blue chip" stocks. Many stocks with long records of continuous and healthy dividend disbursements fail to achieve recognition by the investing public because of lack of communication. On the other hand, a steady demand for the securities of certain companies had distinguished their market acceptance over the years and serves as a reflection of the confidence the investors have in such management.

It must be borne in mind, however, that communication alone is not the sole answer to stockholders' support.

Management by its activities must justify itself. Certainly it must assert its own confidence in its operations by having a measurable amount of stock represented in the holdings of its directors. Such identification of interest by the stockholders goes a long way toward validating the acts of management in the eyes of the investors.

Salaries and expense accounts are subject to stockholder scrutiny and these items provide excellent targets for any dissident group seeking a shift in management. The same is true of any special favors shown either members of the managing group or even selected customers. Shareholders will agree that "it costs money to get business," but the manner in which such monies are spent can prove most embarrassing to management under certain circumstances.

These are salient factors that enter into a healthy stockholder relationship. I have not attempted to explore all aspects of the stockholder-management problem. It presents many facets. However, there are two prevailing considerations and both are of concern to the general public relations program: (1) How management operates the property and (2) what it tells its shareholders about such operations and the people responsible for them.

What Next in Railroad Progress?

Opportunities for technological advances are tremendously varied and appealing, as D. B. Jenks demonstrates in a cogent and provocative paper

The railroad industry has only begun to scratch the surface of the potential in new equipment and new methods of doing business, Downing B. Jenks, executive vice-president of the Rock Island, told the Central Western Shippers Advisory Board on November 9.

"The railroads have depended on the supply industry to a large extent for research," Mr. Jenks said. "Some of this has been excellent and outstanding. However, there is some which did more to keep a certain product looking good than to develop a different and better one. . . . Railroads, if they are to achieve the utmost in progressive methods, will have to do a great deal more research themselves. This does not mean that the supply industry does not have a still greater opportunity for research. It means a definite challenge to the supply people to develop new methods, new products, new tools.

"The only way the railroad industry can become decadent is through decadent thinking. And there can be no decadent thinking if railroad management and railroad suppliers give full freedom to creative ideas in a stepped-up program of research. Back this program with the courage to throw out old procedures in favor of new methods. Tell the world what we are doing through the use of every avenue of communication. Tell our employees what we're doing. If we do, we won't have to be worried about adverse public opinion."

Long Range Thinking Needed

The railroad industry, Mr. Jenks said, must have long-range plans. "We may not follow these plans exactly as the years go by, but at least we need a definite program to depart from." As the basis for such a program he discussed these points:

Motive Power—"We are near the end of a 20-year advance. In the immediate future we think there will be only minor changes. We may, for example, go to a free piston engine which will burn heavy fuel or gas or diesel oil. Already there are some hydraulic switch engines. In Europe they use hydraulic transmissions for road power and some actually have efficiency in some cases higher than that of our present electrical transmissions.

Freight Cars—"I feel definitely we should be in for a major change—and that very soon. It is not at all far-fetched to visualize cars which will be quite a bit lighter than the present ones. Probably couplers will not provide for the slack we now have. We no longer need it for starting trains with diesel power, and with an electrically operated brake we would not have to have the slack action that we now have in stopping trains. Undoubtedly a freight car coupler could be devised similar to some couplers now in use where air and electric lines would couple automatically when cars are shoved together. Possibly a brake can be devised so that cars can be bled electrically from the locomotive when the train stops in the yard.

"We are building freight cars now that supposedly should be good for 40 years. If we advance as I think we should, most equipment built now is going to be quite obsolete in much less than 40 years."

"It is evident that many intelligent people regard the railroads as a form of enterprise that some time in the past reached the peak of its progress and usefulness, and is now in a state of decline."

"It is staggering when you think of the number of people now required to do such simple tasks as coupling air hoses and bleeding cars. It is more staggering when you think of the penalty payments we have to make to switch crews for coupling air when actually there is no justification for it.

"Our manufacturing technique has apparently not improved much where cars are concerned. Diesels cost about $100 per horsepower in 1926 and nearly the same in 1953. Box cars cost three or four times as much now as then.

"I am sure we can devise some type of economical bearing which does not lead to hot boxes, broken journals and all of the maintenance and inspection procedures that are now required. . . . If we use electricity to actuate freight car brakes, we could undoubtedly get an indication of a defective bearing by putting a fuse at the bearing which, if burned out, would shut off the electricity and either apply the brakes or give some indication in the engine.

"We could have freight cars with sides, roofs and ends made in one piece in a press. . . . Underframes could be designed to have sufficient strength with less weights. Parts could be welded together in a machine.

"We may have a box car with a sliding or detachable roof; box cars with 20- or 30-ft doors; flat cars on which ends can be raised up to handle wallboard or lumber or lowered for other commodities. Bodies of cars will probably be connected to the frame so a great deal of the shock of abrupt stops can be absorbed. Or we may have a heavy underframe of a standard pattern on which we could place different types of car bodies of very light construction. Such a body could be placed on a highway trailer chassis to carry out the piggyback principle. . . .

"Industry is demanding more and more special cars

"We will have to tell people more about what our plans are and what we are doing to progress—and we have to give them some tangible evidence of it."

for particular uses. These demands change from time to time. If we have a lighter, cheaper car of shorter life, it will be much easier to meet these demands. Car service and per diem rules, of course, would have to be radically changed. . . .

Passenger Cars—"The key to changes in passenger car design seems to me to be the use of head-end power cars or auxiliary electric power on the engine. This will reduce the weight of the passenger-carrying cars and also reduce the amount of equipment under the cars, all of which takes a great deal of maintenance.

"The price of passenger cars is $2,000 or more per coach passenger. What we eventually hope to get down to is a price of about $700 per coach passenger and less than one-third the weight per passenger as now.

Communications—"At present pole lines cost us a great deal of money, and whenever there is a sleet storm we have a great deal of trouble. We can foresee a much more comprehensive use of carrier circuits. Possibly the carriers will follow wires laid in the ground in a small cable which can be buried by the use of a plow. Microwave will be used more extensively and the use of radio will be expanded.

"We can expand greatly the use of centralized traffic control. Possibly future sidings will be 15 to 20 miles apart and three or four miles long so that meets can be made without stopping. Switch machines, instead of weighing 1,000 pounds and costing $1,500, will weigh 600 pounds and cost $700 and be operated from the dispatcher's office by microwave or carrier.

"Possibly the expansion of train control and cab signaling will do away with the need for wayside signals. Interlockings can be improved and delays reduced by consolidation and by the use of television. Television cameras will give us a better knowledge of what is going on at the stations along the line.

"Similarly television can be used—and we will be using it very soon—instead of crossing watchmen, so crossing gates on several streets can be manually controlled from one central location with a view of the crossings obtained by means of TV cameras.

"Television can also be used for train inspections, thus eliminating the necessity for stopping freight trains. Conceivably, the television picture could be recorded on tape or wire at high speed, which then could be viewed by the inspector at low speed. Information on any defect could then be transmitted to the train by radio. Hot box detectors can be located along the line. These detectors would indicate a hot journal on a train going by at 50 mph purely by the difference in temperature. We plan to have one of these working very soon.

Business Machines—"I can foresee where, when a car is loaded or received from a connection, a punched card will be made by the agent at the originating station containing all of the information necessary for the requirements of the accounting department, the traffic department and the transportation department. An agent, by dialing, might get the rate bureau and get back immediately from an electronic machine information for rates and divisions. . . . When the record from this card is transmitted, the transportation office will have its advice on the car. The earnings, or freight revenues, would go right into the books and reports without being touched by a human hand. We would then have in the general office not a daily report of carloads but an hour-to-hour report on the revenues. Freight bills may be made out automatically from the punched cards like phone and utility bills are made.

Yard Improvements—"We expect to be able to run a train, for example, out of Chicago to Silvis yard and put into the printer in Chicago the cards for all cars in the train, which, in turn, will cut a tape giving all the information on these cars. When the train gets to Silvis and is ready to be shoved over the hump in the classification yard, that tape will be fed into another machine which will automatically line the switches and adjust the retarder to handle classification of the train.

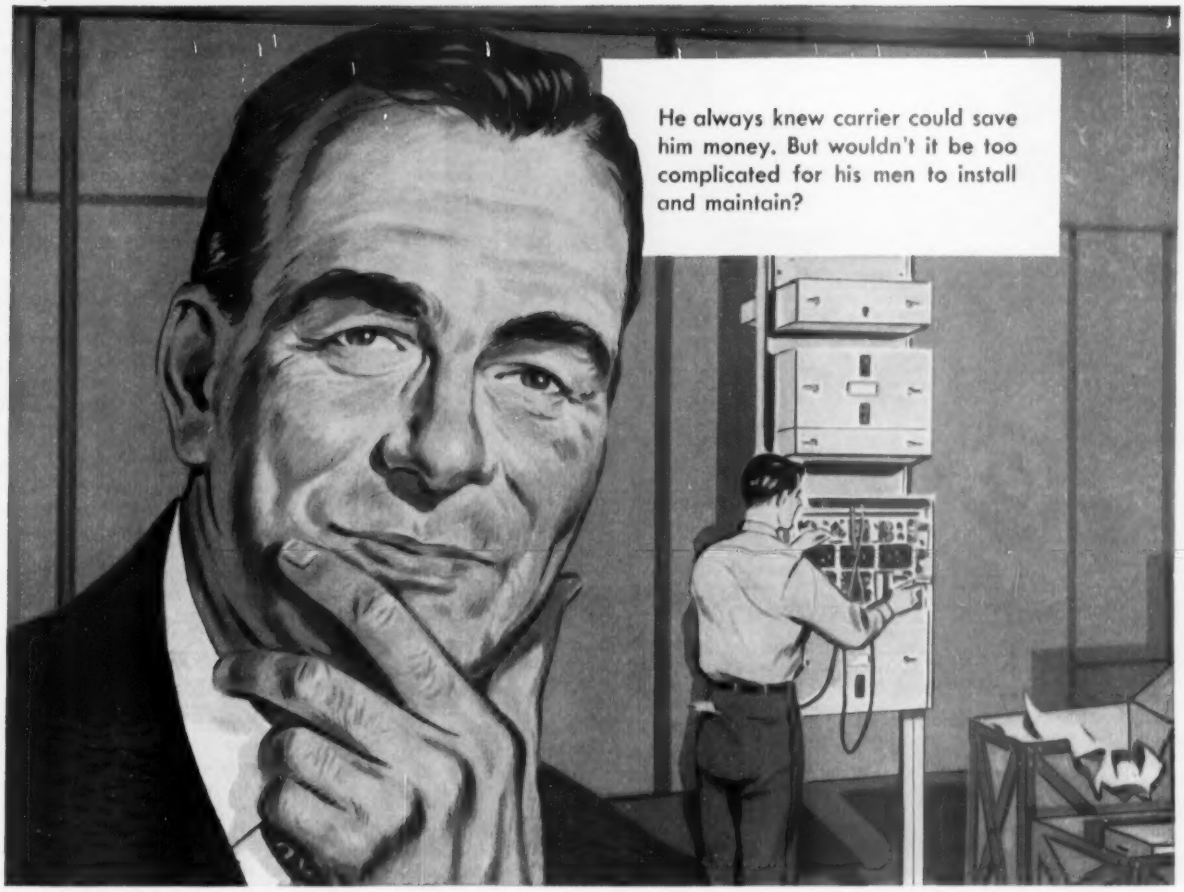
"I am looking for the time when practically all employees in a yard will have two-way wrist or pocket radios which will almost entirely do away with the use of hand signals. This will make for greater safety, fewer mistakes and result in saving a great many steps.

"When a train leaves the yard a perforated tape will be made of the machine record cards which will immediately be transmitted to the general office so that information will be available on the location of a car as soon as it starts to move. Duplicates of this card may be in a box on the side of the car, one of which can be removed at each terminal for any local records, eliminating the need for the yard clerks to copy down car numbers. Such a scheme would ultimately do away with most of the present paper work involved in car tracing. We expect to have devices in the yard office which will show the number of cars on each track in the yard. I have already seen such a device in operation, but not in this country."

Mr. Jenks expects "much greater" use of welded rail. "We have to make considerable improvement, first in our welding technique, and also in our track fastenings to make welded rail economical for greatly extended applications," he said. "Maintenance-of-way machines will almost entirely do away with the use of hand tools by section men. . . . Smaller machines can be devised, particularly one that, operated by one man, can not only jack and tamp track but can be easily set on or taken off the rails.

"Shop practices are, in many ways, quite obsolete. A change in design of passenger and freight equipment undoubtedly will do to car shop practices what the diesel has done to locomotive shop practices. What you see going on on rip tracks has changed very little in the last 40 or 50 years. . . . It is still a far cry from putting the work on a mass production basis with machines of the right size to do in a matter of minutes what now takes three or four days.

"Better equipment will mean greater centralization, and will make possible highly improved supervision. If we have cars which are cheaper and of shorter life, we will not be doing the maintenance work that we are doing now. We will be scrapping the cars instead."



And he thought carrier would be complicated!

He has just installed his first Lenkurt carrier. Now he knows how easy it is to enjoy carrier's economies!

Like many other communications men, he had been putting off buying carrier—simply because it was unfamiliar "electronic" equipment. Then he heard about our "Follow-Thru" Engineering Service, and asked us for detailed recommendations. Following these recommendations, he selected a short-haul Type 33A System.

Rack-assembled and system-tested, his equipment was ready for installation on delivery. His men simply followed complete, clearly illustrated, easy-to-understand instructions. After uncrating the carrier rack, they bolted it to the floor—hooked up line, voice termination, power, and ground connections—and cut it in. Installation was simple as *that!* And similarly simple instructions will make it easy for his men to keep Lenkurt carrier in regular service.

Service as long as you want it! Each step of the way—at installation or at any time during the life of the equipment—we stand ready to assure that your Lenkurt System will work *right!* You can expect—and you will *get*—years of completely satisfactory operation from Type 33A Carrier with no more than routine maintenance.

Why not write now and learn the easy way—the Lenkurt way—to real savings through carrier?

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Export Distributors: International Automatic Electric Corporation, Chicago

AUTOMATIC ELECTRIC—LEADERS IN CARRIER COMMUNICATION—**LENKURT**

Securities

(Continued from page 16)

103; the latter, due June 1, 1968, would be called at 102⅛. The new bonds would be dated December 1, 1954, and their maturity date would be December 1, 1984. They would be sold by competitive bids which would fix the interest rate. There would be provisions for call short of maturity, and sinking-fund provisions.

SAN MANUEL ARIZONA.—This road has applied to the ICC for authority to issue a $4,000,000 note payable to the San Manuel Copper Corp. and secured by a first mortgage on railroad property to finance purchase of rights of way and equipment. The note would mature February 20, 1973. Simultaneously the road applied for authority to issue 40,000 shares of capital stock at $100 per to the mining company. The road will connect the mine, located at San Manuel, Ariz., with the Southern Pacific at Hayden.

Dividends Declared

ALBANY & VERMONT.—$1, reduced semiannual, payable November 15 to holders of record November 1.

MAINE CENTRAL.—5% preferred, $1.25, accumulative, payable December 1 to holders of record November 16.

MISSOURI-KANSAS-TEXAS.—7% preferred A, $1.25, accumulative, payable January 3, 1955, to holders of record December 16.

NORTH PENNSYLVANIA.—$1, quarterly, payable November 25 to holders of record November 18.

PITTSBURGH & WEST VIRGINIA.—50¢, quarterly, payable December 15 to holders of record November 19.

PITTSBURGH, YOUNGSTOWN & ASHTUBULA.—7% preferred, $1.75, quarterly, payable December 1 to holders of record November 19.

ST. LOUIS-SAN FRANCISCO.—62½¢, quarterly, payable December 15 to holders of record December 1.

Security Price Averages

	Nov. 9	Prev. Week	Last Year
Average price of 20 representative railway stocks	74.38	70.64	59.80
Average price of 20 representative railway bonds	96.66	96.25	91.25

Railway Officers

BOSTON & MAINE.—Harold J. Lee, division freight agent at Worcester, Mass., has been appointed general freight and passenger agent at New York, succeeding **Walter H. Lodge,** resigned. **Francis H. Willard,** division freight agent at Concord, N. H., has been named general agent at Portland, Me., succeeding **Wilfred A. Wedge,** who replaces Mr. Lee at Worcester. **Dwight A. Smith, Jr.,** succeeds Mr. Willard as division freight agent at Concord.

CANADIAN PACIFIC EXPRESS.—S. McMahon, general manager, has been appointed vice-president and general manager at Toronto, and **W. J. Hallarn,** general auditor, has been named vice-president and comptroller. Mr. McMahon has been with the express company since 1917 when he began his career at Revelstoke, B.C.

S. McMahon

W. J. Hallarn

Mr. Hallarn joined the company's audit department in 1912 and had been general auditor for the past nine years.

John Donaldson, superintendent of traffic, has been named traffic manager, succeeding **C. N. Ham,** who has retired after 45 years service.

CHESAPEAKE & OHIO.—C. H. Skimin has been appointed superintendent terminals—agent, with jurisdiction at East Buffalo, N.Y., and Suspension Bridge, assuming responsibility for agencies at both points, and headquarters at East Buffalo.

E. H. Byer and **A. E. Duncan** have been appointed assistant superintendents of safety and fire prevention at Richmond, Va., and Grand Rapids, Mich., respectively.

CHICAGO & EASTERN ILLINOIS.—Gene F. Cermak, assistant director of development at Chicago, has been promoted to director of development there to succeed **David T. Sheehy,** resigned.

Frank F. Vesper, general attorney at Chicago, has been appointed general attorney and commerce counsel there, to succeed **Harvard R. Osmond,** promoted to general solicitor at Chicago.

William S. Porter, general agent at Nashville, Tenn., has been appointed industrial agent—development department at Chicago. Named as general agent at East St. Louis, Ill., is **G. R. Phillips.**

CHICAGO & NORTH WESTERN.—S. Fesus, general supervisor freight and passenger car repairs at Chicago, has been promoted to assistant superintendent car department there. **H. P. Cox,** division master mechanic at Clinton, Iowa, becomes superintendent of shops there.

C. D. Hill, assistant master mechanic at Council Bluffs, Iowa, has been promoted to master mechanic at that point.

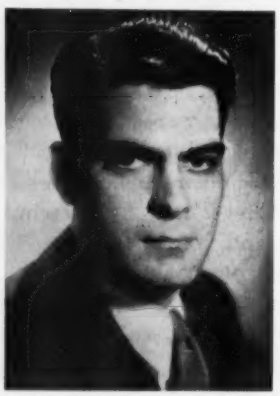
CHICAGO NORTH SHORE & MILWAUKEE.—H. J. Zinter, assistant general manager of the Chicago, Aurora & Elgin at Wheaton, Ill., has resigned from that position to become special engineer of the CNS&M at Chicago.

DELAWARE & HUDSON.—William W. Cox, vice-president and comptroller at New York, will retire November 30, after 46 years of railroad service, 35 of which were with the D&H. **John F. Riley,** assistant comptroller, has been named comptroller, effective December 1.

DETROIT & MACKINAC.—William A. Mallon has been appointed superintendent car service at Tawas City, Mich., succeeding **A. L. Anschuetz,** who retired September 30 after 55 years of service.

James G. Campbell has been named superintendent maintenance, succeeding **R. W. Hickey,** assistant to general manager in charge of maintenance of way and structures and purchasing, who retired September 30 on account of ill health, after nearly 38 years of railroad service, 35 of which were with the D&M.

DETROIT, TOLEDO & IRONTON.—John B. Cook has been appointed general Canadian agent at Toronto. The position of traveling



CENTRAL OF GEORGIA. — Jim Murray, promotion director of Atlanta Newspapers, Inc., has been named assistant to president of the CofG at Savannah, Ga. Mr. Murray succeeds John D. McCartney, who died last February (*Railway Age*, March 1, page 36).

Strip Paint with a Brush

Just 77 seconds later. Paint is completely loose—ready to rinse.

Take a stop watch in one hand and a brush full of Oakite Composition No. 57 in the other and see for yourself how this amazing new paint stripper goes to work in seconds . . . practically lifting the paint behind the brush.

See how Oakite Composition No. 57, paint stripper extraordinary, clings to vertical and inverted surfaces, eliminating costly waste. How easily loosened paint rinses away with water pressure spray.

Oakite Composition No. 57 is tops for removing those tough alkaline resistant paints from surfaces that just can't be dip-stripped. Get the full story today by writing for Special Report B-2415 and the Paint Stripping Handbook F-7893. Both FREE. Write Oakite Products, Inc., 46 Rector Street, New York 6, N. Y.

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OAKITE

RAILWAY DIVISION

freight agent at Toronto, formerly held by Mr. Cook, has been abolished.

DULUTH, SOUTH SHORE & ATLANTIC.—S. P. Berg, chief engineer, Marquette, Mich., will resign November 1, to accept employment in the Southwest.

ERIE.—Michael J. Foli, assistant to comptroller, has been promoted to assistant comptroller, and **John I. Michel,** general accountant, has been named assistant to comptroller, both at Cleveland.

Foster N. Snyder, assistant supervisor work equipment and welding, has been appointed supervisor work equipment and welding, with headquarters as before at Cleveland, succeeding **Ernest H. Ness,** who retired October 31 after more than 37 years of service. **Anthony Kennedy,** district supervisor of work equipment at Meadville, Pa., has been named assistant supervisor work equipment and welding at Cleveland, succeeding Mr. Snyder.

FORT DODGE, DES MOINES & SOUTHERN.—George Duley, conductor, has been appointed superintendent of terminals at East Fort Dodge, Iowa, succeeding **J. F. Gagnon,** who retired September 30.

FORT WORTH & DENVER. — J. Grady May, assistant general freight agent at Fort Worth, Tex., has been appointed general freight agent there, succeeding **Wesley A. Blank,** who retired November 1, after more than 45 years of service. **Cecil L. Williamson,** assistant general freight agent at Fort Worth, has been assigned to Mr. May's former duties. **Fred A. Lewis** succeeds Mr. Williamson.

FRISCO.—Henry L. Morrison, general agent—freight department, at Chicago, has retired after 50 years of service. Mr. Morrison is succeeded by **A. J. Morrow,** general agent—passenger department, who in turn is replaced by **S. W. Chilton,** district passenger agent. **Wilbert Haux,** passenger representative, succeeds Mr. Chilton. **P. J. Ward,** assistant land and tax commissioner, has been promoted to land and tax commissioner at St. Louis, succeeding the late **Walter R. Evans. George E. Bailey,** New York attorney, has been appointed general tax attorney at St. Louis.

GEORGIA & FLORIDA. — L. J. Waters has been appointed general superintendent at Augusta, Ga. The position of superintendent motive power at Douglas, Ga., formerly held by Mr. Waters, has been abolished. **L. L. Cato** has been appointed master mechanic at Douglas, and will assume the duties formerly performed by the superintendent motive power.

GREAT NORTHERN. — William E. Nicholson, assistant western traffic manager at Seattle, has been advanced to western traffic manager, succeeding the late **R. P. Starr.** Mr. Nicholson also has been elected vice-president—traffic of the Pacific Coast Railroad, a GN subsidiary. **Stanley T. Thorson,** general agent—passenger department at St. Paul, transfers to Seattle to replace the late **T. K. Orchard,** while **Raymond J. Class,**

William E. Nicholson

city passenger agent and traveling passenger agent at St. Paul, replaces Mr. Thorson. **Frank L. Strecker,** traveling passenger agent at Tacoma, Wash., becomes district passenger agent at St. Paul.

Mr. Nicholson joined the GN in 1928 as traveling freight agent at Kansas City, and for the next 20 years filled a number of traffic department posts at different locations. In 1948 he was appointed general freight agent at Seattle.

Paul M. H. Greenleaf and **S. J. Anderson,** assistant general freight agents at St. Paul and Portland, Ore., respectively, have been named general freight agents at the same points.

H. H. Knocke, assistant general freight agent at Los Angeles, has been promoted to general freight agent at Seattle, while **L. W. Jager** has been named assistant to general freight agent at that point. **T. L. May,** general agent at Sacramento, Cal., has been promoted to assistant general freight agent at Los Angeles. Mr. May's successor is **R. L. Lamb,** traveling freight agent at San Francisco.

GREAT NORTHERN. — Wilbert F. Arksey, who has been named engineer water service and fuel facilities at St. Paul (*Railway Age*, October 4, page 72).

GULF, MOBILE & OHIO.— Stephen A. Williams, assistant vice-president at Chicago, retired October 1 after 52 years of railroad service.

K. G. Gottschaldt, traffic manager (rates and divisions), and **C. F. Groom,** freight traffic manager, have been appointed general freight traffic managers at Mobile, Ala. **R. P. Tallman** and **J. H. Walkmeyer,** freight traffic managers, have been named assistant general freight traffic managers at the same point. **E. B. Farrell,** traffic manager, freight sales and service, at Mobile, has retired after more than 54 years of continuous service with this road and its predecessor companies. **I. H. Wente,** assistant freight traffic manager at Chicago, has been appointed freight traffic manager there. **W. B. Hahn** and **L. A. Marlin,** assistant general freight agents, have been appointed general freight agents at Chicago, and **J. L. Kane** has been named assistant general freight agent there. **V. V. Cummins** has been appointed assistant general freight agent at Mobile.

ILLINOIS CENTRAL. — Howard C. Altnow, district traffic agent at Fresno, Cal., has been advanced to general agent at Los Angeles, succeeding **Albert A. Zastrow,** who retires November 1. Mr. Altnow's successor is **George R. Nixon,** who transfers from Sacramento, Cal., and in turn has been replaced by **David A. Stubbs,** traveling freight agent at Portland, Ore. **Melvin G. Liner,** commercial agent at Winston-Salem, N.C., has been promoted to district freight agent at Tampa, Fla., succeeding **Ernest W. Stephenson.** Mr. Stephenson has been promoted to general agent at Birmingham, Ala., succeeding **Forest F. Lipe,** who has been transferred to Memphis. **Hardie B. Hewitt,** industrial development agent at Birmingham, retired November 1.

LEHIGH VALLEY.—The office of division freight agent at Rochester, N.Y., has been moved to the LV freight terminal at 333 South avenue, upon closing of the Rochester passenger station November 1.

E. G. Siemon, assistant western freight traffic manager at Chicago, has been appointed western freight traffic manager to replace the late **E. F. Wonder. T. C. Richardson** replaces Mr. Siemon. **B. F. Ringus** has been appointed general agent.

NEW YORK CENTRAL.—J. J. Wright, general mechanical superintendent, Western region, at Cleveland, will have jurisdiction over the Indiana Harbor Belt and the Chicago River & Indiana, in addition to territory noted in *Railway Age* November 1. **R. J. Parsons,** master mechanic at Harmon, N.Y., will have jurisdiction over both

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•

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•

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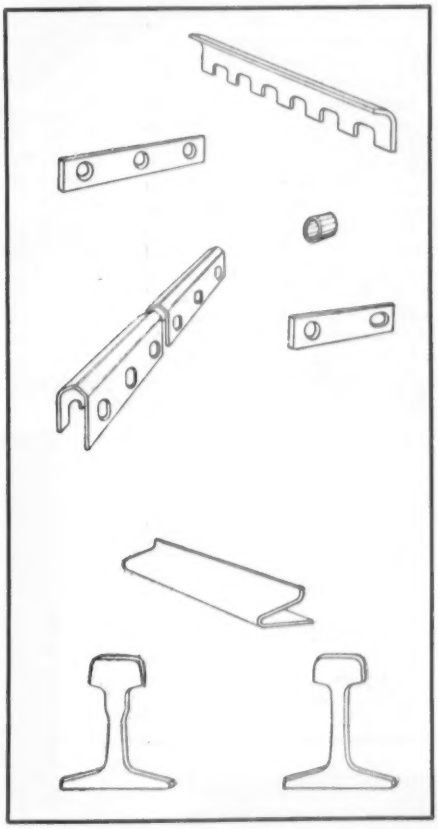

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50 CHURCH STREET NEW YORK, N. Y.

locomotive and car departments on the Mohawk (Schenectady and East), Boston & Albany, and River divisions; locomotive department only on Hudson, Harlem, Putnam and Electric divisions, New York Terminal district and Grand Central Terminal.

S. O. Hughes has been appointed assistant master mechanic—locomotive, and **J. E. DeFreest,** assistant master mechanic—car, at Harmon. **J. F. Cooney** has been named master mechanic; **M. P. Metzger,** assistant master mechanic; and **C. W. Cole,** assistant master mechanic—car, at East Syracuse, N.Y. **J. E. Chandler** has been appointed master mechanic; **B. A. Schmidlin,** assistant master mechanic; **R. D. Ash,** assistant master mechanic—locomotive; and **R. G. Rowles,** assistant master mechanic—car, at Collinwood, Ohio. **H. W. Rasor** has been named master mechanic, and **W. E. Anderson,** assistant master mechanic, at Chicago, with jurisdiction over Western division, West division of Michigan Central, IHB and CR&I. **R. F. Culbreth** has been appointed master mechanic at Detroit, with jurisdiction over both locomotive and car departments on MC district, west of the Detroit river to East yard at Niles, Mich. **H. R. Martin** has been named master mechanic; **B. L. Strohl,** assistant master mechanic, and **L. A. Faulkner,** assistant master mechanic—car, at Indianapolis, with jurisdiction over both locomotive and car departments on the Big Four.

The following positions have been abolished: Master mechanics—locomotives and cars, and assistant master mechanics—locomotives, at Albany, East Syracuse, Buffalo, Collinwood and Indianapolis; master mechanics—locomotives and cars, at Toledo, Chicago, Detroit and Bellefontaine, Ohio.

NORFOLK & WESTERN.—**W. B. Friend,** right of way agent, has been named real estate agent at Roanoke, Va., succeeding **Frank Nelson, Jr.,** who retired November 1, after more than 45 years in the N&W's engineering department. **E. L. Rardin,** engineering department draftsman, succeeds Mr. Friend as right of way agent.

NORFOLK SOUTHERN.—**C. A. Sturtevant,** general freight agent at Norfolk, Va., has been promoted to assistant traffic manager; **C. F. M. Morris, Jr.,** assistant general freight agent, succeeds Mr. Sturtevant.

J. S. Cox, assistant vice-president, has been appointed assistant executive vice-president, with headquarters as before at Norfolk.

J. M. Godwin, office assistant, has been appointed assistant to general superintendent at Raleigh, N. C. **E. H. Roy,** general foreman, has been named master mechanic at Raleigh. The positions of office assistant and general foreman have been abolished.

NORTHAMPTON & BATH.—**E. R. Latchaw,** staff assistant to president, has been appointed superintendent at Northampton, Pa., succeeding the late **J. P. Kivlen.**

PENNSYLVANIA.—**John S. Fair, Jr.,** purchasing agent, has been appointed general purchasing agent, with headquarters as before at Philadelphia, succeeding **Elmer J. Lamneck,** who retired November 1, after more than 47 years of railroad service. **Glenn J. Hoffman,** assistant purchasing agent at Philadelphia, succeeds Mr. Fair as purchasing agent. **R. R. Delaplane** has been appointed assistant purchasing agent at Chicago, succeeding **John P. Sherron,** who has been transferred to Philadelphia, to replace Mr. Hoffman.

John S. Fair, Jr.

A. M. Donnan, assistant general counsel, Central region, has been promoted to general attorney, with headquarters as before at Pittsburgh. **Wallace D. Stewart,** assistant general solicitor at Pittsburgh, succeeds Mr. Donnan as assistant general counsel there. **Violet H. Meehan** has been named assistant general solicitor at Philadelphia.

E. W. Prentiss, assistant engineer, bridges and buildings—Western region, has been promoted to engineer, bridges and buildings at Chicago, to succeed **J. P. Walton,** retired.

Glenn J. Hoffman

Mr. Fair, a Kansan and a graduate of Cornell University, entered PRR service in 1924 in the mechanical department. Transferring to the purchasing department in 1936 as office manager, he was successively promoted to assistant purchasing agent, assistant stores manager, acting purchasing agent and to purchasing agent in 1942.

PITTSBURGH & LAKE ERIE.—**Frank L. Foster,** assistant to president at Pittsburgh, retired November 1, after 49 years of service with the P&LE.

WESTERN PACIFIC.—**E. T. Cuyler,** assistant chief mechanical officer at Sacramento, Cal., has been appointed chief mechanical officer there, succeeding **Elbert E. Gleason,** who retired November 1. Mr. Cuyler joined the WP in 1941 as assistant to superintendent motive power. He has served as assistant chief mechanical officer since April 1949.

E. T. Cuyler

OBITUARY

Alfred J. Lomas, retired vice-president and general manager of the Central region of the **Canadian National,** died recently at his summer home near Barrie, Ont.

NORTHERN PACIFIC.—C. L. Harding, assistant superintendent of the Lake Superior division at Duluth, has been named assistant to vice-president at St. Paul *(Railway Age*, October 25, page 47).

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REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1954

Name of Road	Average mileage operated during period	Operating Revenues: Freight	Pass.	Total 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	New railway operating income 1954	New railway operating income 1953
Akron, Canton & Youngstown	Sept.	171	$383	....	$396	$512	$71	$73	$6	$60	$56	$14	$39	$134	$342	$354	86.3	69.0	$54	$21	$11	$55
	9 mos.	171	3,611	....	3,687	4,867	595	633	53	568	477	135	339	1,210	3,049	3,076	82.7	63.2	638	269	214	729
Atchison, Topeka & Santa Fe	Sept.	13,076	33,337	$3,663	40,930	49,136	6,603	8,134	681	8,034	9,207	1,937	1,106	14,260	33,151	35,408	81.0	72.1	7,780	2,755	5,012	6,344
	9 mos.	13,073	321,280	33,634	392,088	467,643	59,426	69,217	6,039	75,455	83,403	17,248	10,673	131,016	296,336	321,854	75.6	68.8	95,753	49,195	45,396	61,030
Atlanta & St. Andrews Bay	Sept.	82	297	1	302	282	23	29	3	25	26	5	6	66	139	145	45.9	51.3	163	76	57	36
	9 mos.	82	2,754	11	2,817	2,838	220	277	25	205	197	42	53	619	1,263	1,293	44.8	45.5	1,555	696	550	442
Atlanta & West Point	Sept.	93	248	31	331	373	44	65	5	57	64	13	15	134	271	314	81.9	84.0	60	22	19	20
	9 mos.	93	2,103	310	2,847	3,342	388	498	55	488	603	110	135	1,241	2,445	2,817	85.9	84.3	401	184	78	172
Western of Alabama	Sept.	133	308	30	376	408	49	57	7	62	67	18	17	129	279	311	74.3	76.4	96	49	50	44
	9 mos.	133	2,532	297	3,147	3,559	463	507	71	567	613	152	154	1,186	2,558	2,765	82.3	77.7	588	247	351	375
Atlantic & Danville	Sept.	205	115	....	117	145	28	35	2	15	15	4	11	40	103	121	87.5	83.4	15	10	—20	—6
	9 mos.	205	1,154	....	1,170	1,450	264	313	17	103	135	42	102	404	968	1,120	82.7	77.2	202	78	—96	20
Atlantic Coast Line	Sept.	5,352	9,105	1,051	11,164	11,463	2,159	2,310	167	2,799	3,150	582	376	4,415	10,290	10,885	92.2	95.0	874	150	751	641
	9 mos.	5,359	91,542	13,896	115,325	125,994	19,161	21,859	1,583	24,337	30,947	5,314	3,475	42,926	95,328	107,986	82.7	85.7	19,997	8,650	8,419	6,966
Charleston & Western Carolina	Sept.	343	489	1	500	509	155	164	10	101	100	42	18	148	435	459	87.1	90.1	65	20	50	44
	9 mos.	343	4,835	14	4,965	5,306	1,375	1,391	73	923	904	383	162	1,470	4,056	4,106	81.7	77.4	909	365	485	648
Baltimore & Ohio	Sept.	6,183	27,657	1,436	31,442	39,654	3,919	5,253	462	6,226	8,095	1,021	860	12,824	25,368	30,740	80.7	77.5	6,073	1,895	2,806	3,880
	9 mos.	6,183	248,886	14,789	284,473	351,966	33,528	46,245	4,239	56,715	73,572	9,211	7,650	120,239	232,279	276,345	81.7	78.5	52,194	16,165	25,010	35,921
Staten Island Rapid Transit	Sept.	29	184	51	237	276	49	48	14	27	22	2	1	136	248	224	104.7	81.3	—11	39	—70	—10
	9 mos.	29	1,619	458	2,102	2,611	431	520	111	236	260	17	14	1,165	2,124	2,354	101.1	90.2	—22	350	—539	—283
Bangor & Aroostook	Sept.	602	509	27	576	699	386	200	17	219	245	88	19	256	949	774	164.8	110.7	—373	Cr 150	—40	77
	9 mos.	602	9,447	269	10,103	10,093	2,486	2,300	146	2,031	2,129	746	176	2,753	8,063	7,825	79.8	77.5	2,041	926	1,727	1,612
Bessemer & Lake Erie	Sept.	209	1,834	1	1,848	3,077	123	213	18	436	626	142	22	362	1,042	1,441	56.4	46.8	805	445	647	753
	9 mos.	209	16,233	4	16,366	23,610	1,753	1,953	176	5,134	6,354	1,284	240	3,644	11,659	13,556	71.2	57.4	4,707	2,547	3,923	4,942
Boston & Maine	Sept.	1,676	4,928	800	6,539	7,353	1,204	1,288	157	932	1,097	190	115	3,007	5,565	5,793	85.1	78.8	974	493	2	484
	9 mos.	1,676	45,790	8,106	60,982	67,252	11,498	11,839	1,463	9,036	10,053	1,597	1,086	27,453	52,020	53,936	85.3	80.2	8,961	4,556	124	3,885
Cambria & Indiana	Sept.	35	109	....	109	150	18	21	1	99	94	22	....	20	146	143	132.9	95.4	—36	52	66	91
	9 mos.	35	1,077	....	1,078	1,336	175	174	7	937	843	200	1	189	1,367	1,273	126.9	95.3	—289	449	569	720
Canadian Pacific Lines in Maine	Sept.	234	250	62	344	402	101	90	5	74	80	17	8	166	363	359	105.6	89.5	—19	29	—53	4
	9 mos.	234	3,943	471	4,688	5,271	880	992	49	908	1,188	156	73	1,908	3,904	4,473	83.3	84.9	783	252	275	248
Canadian Pacific Lines in Vermont	Sept.	90	177	26	224	224	72	140	5	31	38	....	7	121	240	316	107.1	141.4	—16	14	—92	—174
	9 mos.	90	1,658	130	1,986	2,037	416	768	40	261	335	2	62	1,083	1,903	2,363	95.8	116.0	83	117	—571	—957
Central of Georgia	Sept.	1,764	2,883	146	3,237	3,370	527	571	52	559	569	134	145	1,235	2,658	2,794	82.1	82.9	578	221	321	285
	9 mos.	1,771	25,762	1,445	29,545	32,860	4,663	5,330	399	4,866	5,177	1,238	1,289	11,673	24,338	26,219	82.4	79.8	5,206	1,927	2,909	3,050
Central of New Jersey	Sept.	613	3,741	447	4,596	5,276	645	756	91	716	965	180	78	1,913	3,538	4,014	77.0	76.1	1,058	487	358	582
	9 mos.	613	34,326	4,063	41,542	47,123	5,734	6,449	794	7,328	9,254	1,587	683	17,897	33,425	37,662	80.5	79.9	8,117	4,195	2,414	3,904
Central Vermont	Sept.	422	724	66	847	999	201	238	17	99	106	11	16	356	719	763	84.8	76.4	128	50	—9	100
	9 mos.	422	6,923	571	8,095	8,794	1,941	1,896	148	942	1,150	97	153	3,298	6,713	6,929	82.9	78.8	1,382	386	130	661
Chesapeake & Ohio	Sept.	5,115	23,375	558	25,479	30,303	3,464	3,978	369	4,327	5,318	1,500	636	8,480	18,182	20,472	71.4	67.6	7,297	2,991	4,586	5,370
	9 mos.	5,103	205,253	5,672	222,958	262,818	32,274	35,149	3,403	43,496	49,292	13,584	6,148	76,601	170,195	183,576	76.3	69.8	52,763	20,880	34,955	45,461
Chicago & Eastern Illinois	Sept.	868	2,110	210	2,571	3,011	355	442	29	430	538	131	135	1,059	2,154	2,355	83.8	78.2	417	102	235	335
	9 mos.	868	19,490	2,088	23,936	27,471	3,168	3,552	260	4,032	4,802	1,176	1,173	9,488	19,457	20,923	81.3	76.2	4,479	1,129	2,456	3,204
Chicago & Illinois Midland	Sept.	130	664	....	679	725	63	86	8	130	162	23	29	197	464	534	68.4	73.7	215	109	69	64
	9 mos.	130	5,584	....	5,713	6,503	621	740	72	1,237	1,404	209	289	1,815	4,375	4,821	76.6	74.1	1,338	643	365	571
Chicago & North Western	Sept.	7,876	13,481	1,885	17,318	18,328	2,760	2,841	344	3,115	3,170	844	397	7,609	14,823	14,715	85.6	80.3	2,495	1,137	810	1,489
	9 mos.	7,876	108,747	16,802	140,607	153,860	22,566	26,231	3,123	26,184	28,684	7,443	3,461	65,407	125,388	134,290	89.2	87.3	15,219	9,565	—526	4,273
Chicago, Burlington & Quincy	Sept.	8,858	17,934	1,762	21,920	23,995	3,191	4,442	364	3,740	3,429	833	487	8,204	16,473	17,396	75.1	72.5	5,448	2,522	2,320	2,619
	9 mos.	8,861	151,739	14,291	186,531	207,591	26,930	35,022	3,636	31,552	29,680	7,220	4,471	70,654	141,058	149,012	75.6	71.8	45,473	22,274	20,065	23,231
Chicago Great Western	Sept.	1,470	2,644	8	2,815	2,980	425	481	41	341	335	121	111	927	1,878	1,914	66.7	64.2	937	371	350	387
	9 mos.	1,470	22,703	96	24,309	22,255	3,555	3,597	384	3,653	2,737	1,084	994	7,710	16,592	14,956	68.3	67.2	7,717	2,855	3,050	2,944
Chicago, Indianapolis & Louisville	Sept.	541	1,580	48	1,779	1,866	260	369	26	249	259	73	87	628	1,325	1,430	74.5	76.6	454	174	179	185
	9 mos.	541	13,600	525	15,300	16,407	2,297	3,147	204	2,339	2,433	640	797	5,602	11,945	12,858	78.1	78.3	3,354	1,151	1,336	1,446
Chicago, Milw., St. Paul & Pacific	Sept.	10,640	18,072	1,266	21,569	23,440	3,229	4,133	418	3,640	4,395	910	454	8,198	16,542	18,843	76.7	80.4	5,027	1,505	2,650	1,644
	9 mos.	10,639	145,719	11,298	175,721	194,725	29,968	32,930	3,681	35,863	40,807	8,047	4,310	71,463	150,710	164,650	85.8	84.6	25,011	12,189	6,019	9,120
Chicago, Rock Island & Pacific	Sept.	7,885	11,941	1,438	14,728	16,292	2,420	2,602	251	2,511	2,739	494	477	5,609	11,844	12,362	80.4	75.9	2,885	942	1,209	2,179
	9 mos.	7,886	114,695	13,115	140,937	160,268	19,695	21,094	2,245	23,309	24,541	5,014	4,342	52,371	107,189	111,748	76.1	69.7	33,748	12,504	13,840	21,253
Chic., St. Paul, Minn. & Omaha	Sept.	1,616	2,383	165	2,773	3,000	511	518	58	372	467	89	66	1,357	2,448	2,551	88.3	85.0	325	201	—179	5
	9 mos.	1,616	20,864	1,419	24,227	25,012	3,892	4,452	443	3,541	3,898	821	577	11,772	20,962	22,683	86.5	90.7	3,265	1,546	—745	—1,278
Clinchfield	Sept.	317	1,828	....	1 837	2,075	209	382	20	306	357	90	46	436	1,038	1,265	56.5	61.0	798	127	784	794
	9 mos.	317	15,092	4	15,175	18,528	2,598	3,279	176	2,729	3,126	1,092	425	3,503	9,631	10,994	63.5	59.3	5,544	1,813	4,301	6,641

(Table continued on next left-hand page)

All Together...Now

352,359

CAR SETS OF BARBER TRUCKS HAVE BEEN SOLD

OVER 30,288

CAR SETS SOLD

IN JUST THE

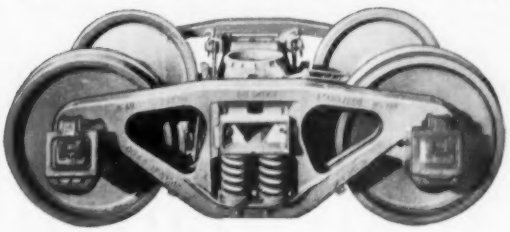
LAST 33 MONTHS

Barber is grateful. The mechanical and purchasing men of more than 100 major railroads and private car lines have specified and bought 352,359 car sets of Barber Stabilized Trucks in the United States and Canada, since their introduction. Also, hundreds of car men have helped tremendously, passing along their preferences for the Barber Truck. They like its extremely simple dismantling, servicing and assembling which saves so much time and money.

In just 33 months (January 1, 1952 through September 30, 1954) Barber has sold 30,288 car sets in the United States alone, to *continue* their leadership in the Stabilized Truck field.

For smooth-riding freight cars, satisfaction in every department . . . specify Barber! Standard Car Truck Company, 332 S. Michigan Ave., Chicago 4, Ill.

Specify Smoother-Riding



BARBER

STABILIZED TRUCKS

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Colorado & Southern	Sept.	724	1,046	90	1,267	1,366	221	256	18	191	167	42	34	486	1,003	944	79.2	69.1	264	117	104	165
	9 mos.	728	8,616	636	10,367	12,051	1,538	1,666	201	1,970	1,591	373	281	3,917	8,251	8,092	79.6	67.2	2,115	973	925	1,718
Ft. Worth & Denver	Sept.	1,038	1,577	139	1,892	1,693	428	304	32	275	320	44	59	647	1,523	1,354	80.5	80.0	368	69	163	145
	9 mos.	1,038	13,589	1,250	16,335	17,324	2,625	2,703	335	2,426	2,418	390	528	5,569	12,066	12,275	73.9	70.9	4,269	1,187	2,020	2,238
Colorado & Wyoming	Sept.	40	155	....	251	278	27	14	2	31	37	11	1	93	165	160	65.6	57.3	86	56	29	47
	9 mos.	40	1,140	....	1,955	2,618	147	159	18	244	316	102	13	809	1,310	1,537	66.9	58.6	645	341	289	425
Columbus & Greenville	Sept.	168	138	....	147	176	74	31	4	25	36	6	5	52	175	144	118.6	81.8	—27	Cr. 6	—20	6
	9 mos.	168	1,301	....	1,369	1,551	317	317	33	229	240	56	41	428	1,185	1,212	86.6	78.1	183	152	28	119
Delaware & Hudson	Sept.	793	4,042	186	4,356	5,018	789	788	172	738	724	179	84	1,521	3,326	3,448	76.4	68.7	1,030	299	704	999
	9 mos.	793	33,490	1,447	36,302	41,718	5,356	6,953	616	7,016	7,373	1,621	787	13,738	28,753	31,489	79.2	75.5	7,549	2,573	4,492	7,284
Delaware, Lackawanna & Western	Sept.	962	5,012	752	6,407	7,598	800	935	140	965	1,157	316	180	3,078	5,302	5,640	82.8	74.2	1,105	515	483	927
	9 mos.	962	45,549	6,942	58,230	68,011	7,238	8,059	1,261	9,788	11,453	2,855	1,606	27,565	48,705	52,325	83.6	76.9	9,525	4,293	4,543	7,695
Denver & Rio Grande Western	Sept.	2,164	6,226	260	6,734	7,452	706	806	138	1,003	1,187	284	193	2,020	4,205	4,635	62.5	62.2	2,529	1,136	1,327	1,205
	9 mos.	2,165	49,417	2,230	53,719	63,837	7,352	8,746	1,090	8,478	10,420	2,574	1,688	16,226	36,356	42,229	67.7	66.2	17,362	7,513	9,996	9,329
Detroit & Mackinac	Sept.	232	159	....	161	203	40	44	3	25	23	9	5	38	119	121	73.6	59.5	43	24	19	35
	9 mos.	232	1,438	2	1,466	1,597	360	370	27	209	214	85	45	332	1,048	1,051	71.5	65.8	418	254	201	259
Detroit & Toledo Shore Line	Sept.	50	456	....	504	637	75	96	3	56	60	18	17	183	345	383	68.4	60.0	159	38	32	70
	9 mos.	50	5,191	....	5,607	6,626	717	749	28	524	570	161	151	1,704	3,223	3,509	57.5	53.0	2,384	761	652	990
Detroit, Toledo & Ironton	Sept.	464	1,195	....	1,265	1,908	264	273	25	260	301	98	41	424	1,053	1,420	83.2	74.4	212	48	218	215
	9 mos.	464	12,785	2	13,267	17,003	2,427	2,228	212	2,385	2,315	876	326	4,055	9,802	12,059	73.9	70.9	3,466	1,349	2,156	2,135
Duluth, Missabe & Iron Range	Sept.	567	4,065	1	4,858	8,781	456	583	66	495	675	83	9	1,266	2,345	3,526	48.3	40.2	2,513	1,249	1,237	1,745
	9 mos.	567	28,735	7	33,741	51,971	4,693	5,508	571	6,315	6,559	969	90	10,360	22,490	27,803	66.7	53.5	11,251	5,892	5,170	8,176
Duluth, South Shore & Atlantic	Sept.	553	511	5	549	620	142	241	9	123	142	23	27	198	511	651	93.0	104.9	38	31	2	—43
	9 mos.	553	4,827	45	5,172	6,311	1,194	1,570	92	1,118	1,344	208	245	1,794	4,556	5,376	88.1	85.2	616	257	276	368
Duluth, Winnipeg & Pacific	Sept.	175	467	1	474	398	89	101	4	96	93	2	6	214	412	398	87.1	100.1	61	42	—50	—95
	9 mos.	175	4,093	8	4,166	3,839	712	801	38	631	689	19	49	1,913	3,374	3,350	81.0	87.3	792	327	—194	—330
Elgin, Joliet & Eastern	Sept.	236	2,498	....	3,205	4,247	224	374	27	493	722	114	33	1,238	2,155	2,498	67.3	58.8	1,049	250	610	421
	9 mos.	236	26,053	..	32,361	42,239	2,214	2,917	224	12,314	8,287	1,029	316	12,353	28,724	27,594	88.8	65.3	3,637	1,997	—310	3,661
Erie	Sept.	2,225	10,806	540	12,393	15,387	2,014	2,610	266	2,117	2,144	512	350	5,571	10,468	11,832	84.5	76.9	1,926	429	871	1,351
	9 mos.	2,224	99,130	5,166	113,639	138,002	16,747	19,286	2,200	18,741	19,518	4,567	3,179	49,323	93,645	102,345	82.4	74.2	19,994	4,938	9,271	14,500
Florida East Coast	Sept.	571	1,489	285	1,926	1,935	595	362	43	499	514	78	81	879	2,203	1,872	114.4	96.7	—277	183	—559	—142
	9 mos.	571	17,390	4,765	24,115	25,472	3,967	3,355	399	4,467	4,736	701	706	9,394	20,078	19,575	83.3	76.8	4,037	1,700	706	2,838
Georgia Railroad	Sept.	321	618	23	722	802	115	128	12	135	136	33	33	313	629	640	87.2	79.8	93	41	89	138
	9 mos.	321	5,375	226	6,254	7,249	1,104	1,091	92	1,186	1,228	295	303	2,710	5,613	5,874	89.7	81.0	641	323	639	1,289
Georgia & Florida	Sept.	332	224	....	228	286	65	95	3	34	36	8	18	78	213	252	93.4	88.1	15	15	—10	—7
	9 mos.	335	2,536	....	2,566	3,044	842	942	113	836	842	68	174	808	2,310	2,487	90.0	81.7	256	134	—100	118
Grand Trunk Western	Sept.	952	3,489	260	4,059	4,292	789	824	55	849	922	90	77	2,168	4,085	4,195	100.7	97.7	—26	360	—857	—636
	9 mos.	952	37,460	1,999	42,448	47,178	6,455	6,792	486	7,594	7,860	816	710	19,527	35,958	37,365	84.7	79.2	6,490	2,856	201	3,802
Can. Natl. Lines in New Engl.	Sept.	172	210	7	230	202	87	65	10	24	51	....	3	122	245	263	106.4	130.4	—15	25	—103	—146
	9 mos.	172	1,466	68	1,822	2,034	657	643	89	279	378	1	25	1,298	2,386	2,483	131.0	122.1	—564	224	—1,313	—1,149
Great Northern	Sept.	8,308	22,667	936	25,326	27,196	4,768	4,179	329	3,185	3,781	299	420	7,370	16,676	16,910	65.8	62.2	8,650	4,349	3,492	4,398
	9 mos.	8,306	164,586	8,379	186,651	199,066	36,433	36,822	2,923	32,502	34,204	6,328	3,673	62,231	142,683	146,180	76.4	73.4	43,968	21,793	16,620	20,561
Green Bay & Western	Sept.	224	361	....	370	449	115	109	4	59	45	8	23	116	331	295	89.5	65.8	39	30	—20	49
	9 mos.	224	3,230	....	3,291	3,508	837	782	36	433	369	71	206	956	2,591	2,308	78.7	65.8	700	330	139	394
Gulf, Mobile & Ohio	Sept.	2,758	5,741	312	6,508	7,826	1,047	1,202	85	1,193	1,440	283	260	1,992	4,824	5,450	74.1	69.6	1,683	584	832	956
	9 mos.	2,761	53,406	3,078	60,689	70,277	9,079	10,683	668	11,797	12,710	2,515	2,470	18,907	45,447	49,028	74.9	69.7	15,242	6,116	6,408	8,454
Illinois Central	Sept.	6,537	19,672	1,794	23,444	25,726	3,826	3,818	410	3,554	4,042	748	526	8,368	17,315	17,928	73.9	69.7	6,129	2,818	2,866	3,089
	9 mos.	6,537	168,907	16,117	205,535	229,645	32,513	34,698	3,602	35,425	36,843	6,407	4,782	76,088	158,187	164,760	77.0	71.7	47,348	25,257	17,855	24,807
Illinois Terminal	Sept.	355	762	51	921	1,100	151	143	37	145	190	42	44	392	790	826	85.8	75.1	131	47	42	114
	9 mos.	355	6,787	485	8,091	9,562	1,287	1,441	240	1,366	1,652	376	405	3,390	7,008	7,580	86.6	79.3	1,083	456	442	880
Kansas City Southern	Sept.	891	2,943	100	3,360	3,825	335	634	39	397	607	92	85	1,018	1,955	2,598	58.2	67.9	1,405	594	627	615
	9 mos.	891	26,966	1,012	30,971	36,439	3,089	4,708	334	3,444	4,817	816	830	9,420	17,900	22,016	57.8	60.4	13,072	5,729	5,662	6,324
Kansas, Oklahoma & Gulf	Sept.	327	408	....	410	521	62	98	7	37	60	11	27	107	254	324	62.0	62.2	155	65	64	70
	9 mos.	327	3,792	3	3,811	5,175	571	852	66	320	417	102	252	1,028	2,360	2,836	61.9	54.8	1,451	608	553	903
Lake Superior & Ishpeming	Sept.	156	306	....	369	640	56	66	13	55	62	16	2	93	219	264	59.4	41.2	150	60	101	153
	9 mos.	156	2,187	....	2,659	4,020	533	541	118	537	530	144	18	686	1,877	2,081	70.6	51.8	782	382	511	974
Lehigh & Hudson River	Sept.	96	260	....	260	306	48	43	4	28	30	8	14	84	187	188	71.7	61.3	74	21	30	39
	9 mos.	96	2,409	....	2,416	2,603	364	375	23	271	265	76	124	789	1,654	1,641	68.5	63.0	762	270	256	345
Lehigh & New England	Sept.	180	537	....	541	801	86	86	6	141	146	40	15	162	443	492	81.9	61.3	98	117	91	186
	9 mos.	180	4,893	....	4,935	6,058	725	781	65	1,254	1,187	358	120	1,703	4,156	4,245	84.2	70.1	779	621	720	1,225
Lehigh Valley	Sept.	1,163	5,084	280	5,655	6,491	900	832	98	888	1,181	208	137	2,360	4,531	4,832	80.1	74.4	1,123	343	615	955
	9 mos.	1,163	43,325	2,644	48,707	57,838	7,486	7,598	848	8,067	9,878	1,865	1,230	21,162	40,185	43,138	82.5	74.6	8,521	3,330	3,734	8,052
Long Island	Sept.	360	1,075	3,731	5,030	4,793	715	611	87	927	866	125	24	2,681	4,509	3,932	89.6	82.0	521	335	—104	174
	9 mos.	360	9,527	29,830	41,413	42,151	5,990	5,791	821	8,422	8,030	1,124	140	21,987	38,084	35,738	92.0	84.8	3,329	3,021	—2,320	448

(Table continued on next left-hand page)

He's helping to cut your operating costs!

You know how accidents affect your operating costs. Fewer accidents, lower costs. Fifty percent of all accidents are preventable. And safety messages *that get read* — says the National Safety Council — do help reduce accidents. So . . .

Use AJAX Cups to put your safety messages in your worker's hand — where he'll see them several times a day, when he's relaxed, receptive, ready to read. (And he'll appreciate the convenience and complete sanitation of crisp, clean, easy-to-drink-from AJAX Cups, too.)

* * *

Whether to comply with the law — which in many states requires it — or simply to promote good employee relations, many roads use AERO or AJAX Cups in cab and caboose. AERO, a 2-piece, flat-bottom cup, also available imprinted with standard safety messages. And for each there's a heavy steel dispenser which can be welded or bolted securely to bulkheads.

UNITED STATES ENVELOPE COMPANY

General Offices: • Springfield 2, Mass.

15 DIVISIONS FROM COAST TO COAST

CT-R

REVENUES AND EXPENSES OF RAILWAYS

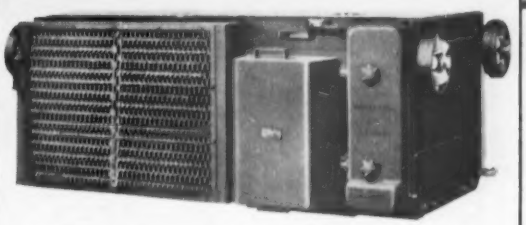
(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Louisiana & Arkansas	Sept.	752	2,008	46	2,142	2,595	237	526	19	266	386	92	68	575	1,219	1,650	56.9	63.6	923	405	461	527
	9 mos.	752	17,870	483	19,123	22,886	2,399	3,665	193	2,377	2,675	794	667	5,316	11,471	13,294	60.0	58.1	7,653	3,179	3,898	4,796
Louisville & Nashville	Sept.	4,737	13,728	878	15,692	19,336	2,595	2,740	259	3,358	3,836	946	347	5,859	12,836	13,859	81.8	71.7	2,856	1,732	2,053	3,000
	9 mos.	4,735	126,837	8,417	145,895	177,455	24,981	24,739	2,062	33,193	34,699	8,461	3,111	54,004	121,347	126,948	83.2	71.5	24,548	13,502	16,691	26,256
Maine Central	Sept.	944	1,488	94	1,743	1,952	552	380	40	349	354	77	16	710	1,722	1,552	98.8	79.5	20	138	—179	189
	9 mos.	944	16,194	993	18,591	19,277	4,070	4,075	259	3,519	3,184	690	183	6,665	15,274	14,895	82.2	77.3	3,317	1,441	1,154	1,897
Midland Valley	Sept.	334	180	....	185	248	44	53	5	13	23	4	5	54	124	152	67.0	61.3	61	23	20	26
	9 mos.	334	1,514	....	1,543	1,946	361	423	48	101	148	34	47	480	1,068	1,225	69.2	62.9	476	197	168	241
Minneapolis & St. Louis	Sept.	1,397	1,728	8	1,802	2,040	319	334	32	262	273	76	97	569	1,345	1,446	74.7	70.9	457	225	169	251
	9 mos.	1,397	14,790	47	15,426	16,444	2,630	3,005	275	2,403	2,403	685	955	5,210	12,157	12,813	78.8	77.9	3,268	1,613	1,539	1,457
Minn., St. Paul & S. Ste. Marie	Sept.	3,222	3,697	71	3,964	4,517	750	713	49	609	619	103	82	1,248	2,830	2,887	71.4	63.9	1,134	410	504	762
	9 mos.	3,222	27,099	788	29,554	30,983	6,320	6,829	449	5,611	6,043	904	724	11,347	25,118	26,486	85.0	85.5	4,436	2,170	2,001	1,660
Mississippi Central	Sept.	148	205	....	209	229	35	62	2	24	28	6	14	48	129	165	62.0	72.0	79	37	33	24
	9 mos.	148	1,777	—1	1,812	2,090	504	498	22	240	284	54	124	454	1,413	1,530	78.0	73.2	398	148	163	221
Missouri Illinois	Sept.	172	448	....	451	500	81	90	4	73	72	26	10	106	281	328	62.3	65.6	170	28	151	59
	9 mos.	172	3,830	1	3,856	4,467	679	702	36	699	677	239	85	1,000	2,560	2,658	66.5	59.5	1,296	492	841	775
Missouri-Kansas-Texas Lines	Sept.	3,241	4,933	280	5,770	6,788	864	1,108	96	909	1,139	239	240	2,291	4,612	5,173	79.9	76.2	1,158	403	454	691
	9 mos.	3,241	46,982	2,437	54,537	65,331	7,941	9,853	908	8,271	10,018	2,148	2,194	21,236	42,382	47,092	77.7	72.1	12,155	3,596	5,217	7,431
Missouri Pacific	Sept.	6,928	14,613	882	17,155	19,715	3,000	3,924	297	3,192	4,195	808	449	6,376	13,666	16,341	79.7	82.9	3,489	1,128	1,881	1,729
	9 mos.	6,924	134,632	7,804	157,523	180,660	27,178	33,875	2,640	28,735	36,077	7,192	4,275	60,126	126,278	145,211	80.2	80.4	31,245	9,226	16,091	18,772
International-Great Northern	Sept.	1,103	2,201	141	2,593	2,889	505	621	61	473	583	123	58	1,079	2,232	2,595	86.1	89.8	360	88	227	237
	9 mos.	1,103	20,396	1,310	23,742	28,863	4,542	6,233	359	4,262	5,194	1,067	551	9,958	20,391	24,077	85.9	83.4	3,351	945	1,875	2,918
Gulf Coast Lines	Sept.	1,724	2,705	98	3,037	3,198	620	720	66	487	543	114	91	1,064	2,401	2,582	79.0	80.7	636	3	492	316
	9 mos.	1,724	27,951	730	30,664	32,970	6,119	7,456	535	4,590	4,884	980	829	10,366	23,222	25,045	75.7	75.9	7,442	1,041	4,479	3,968
Monongahela	Sept.	177	470	....	473	1,055	119	97	16	66	72	16	1	167	359	389	75.8	36.9	115	31	—40	245
	9 mos.	177	4,218	....	4,249	6,058	646	1,099	145	566	635	124	7	1,493	2,809	3,855	66.1	63.6	1,440	248	139	357
Montour	Sept.	51	120	....	124	271	12	38	2	38	79	18	1	58	118	204	95.3	75.4	6	26	34	85
	9 mos.	51	1,156	....	1,232	2,014	133	292	22	439	697	166	9	492	1,159	1,722	94.1	85.5	73	306	381	452
Nashville, Chatt. & St. Louis	Sept.	1,043	2,364	103	2,741	3,358	480	485	45	421	517	138	122	1,105	2,248	2 394	82.0	71.3	493	188	301	498
	9 mos.	1,034	22,559	1,179	26,643	30,304	4,347	4,645	386	3,657	4,440	1,234	1,058	10,035	20,173	21,548	75.7	71.1	6,470	2,873	3,305	4,446
New York Central	Sept.	10,713	40,300	8,607	56,517	69,438	6,931	9,644	1,063	9,569	14,058	2,356	1,056	25,416	46,169	56,511	81.7	81.4	10,347	4,882	3,563	5,733
	9 mos.	10,713	379,009	79,898	527,020	624,221	73,892	85,683	9,245	101,749	125,714	21,379	9,756	239,628	455,042	513,348	86.3	82.2	71,978	42,086	12,276	46,846
Pittsburgh & Lake Erie	Sept.	221	2,447	62	2,639	4,075	391	515	41	788	1,050	288	76	1,092	2,564	3,160	97.2	77.5	75	341	716	1,231
	9 mos.	221	22,948	586	24,934	38,474	3,776	4,793	370	8,204	9,557	2,601	689	9,899	24,554	29,598	98.5	76.9	379	1,979	5,894	10,636
New York, Chicago & St. Louis	Sept.	2,185	11,347	151	11,963	14,001	1,425	1,743	142	1,966	2,280	361	306	4,412	8,532	9,545	71.3	68.2	3,431	1,724	1,375	1,806
	9 mos.	2,185	102,085	1,376	107,114	126,585	12,353	15,120	1,368	17,605	19,878	3,165	2,842	39,468	76,249	85,291	71.2	67.4	30,865	15,193	12,447	16,968
New York, New Haven & Hartford	Sept.	1,769	6,544	4,016	12,013	13,959	1,721	2,133	255	1,866	2,075	433	230	5,596	10,219	10,952	85.1	78.5	1,794	513	338	1,034
	9 mos.	1,770	62,080	37,258	112,351	123,800	15,602	19,814	2,419	16,845	18,148	3,680	1,713	50,096	91,281	98,813	81.2	79.8	21,070	7,603	4,973	7,243
New York Connecting	Sept.	21	223	....	246	298	136	134	25	17	20	....	....	67	223	235	90.7	78.6	23	81	—57	—20
	9 mos.	21	2,404	....	2,594	3,110	936	834	226	172	228	....	....	722	1,858	1,904	71.6	61.2	735	752	—21	506
New York, Ontario & Western	Sept.	541	446	....	462	604	119	146	34	83	81	22	23	239	493	552	106.7	91.3	—31	39	—148	—78
	9 mos.	541	4,351	....	4,479	5,445	1,094	1,179	177	789	788	203	211	2,271	4,636	4,869	103.5	89.4	—157	329	—1,154	—438
New York, Susquehanna & Western	Sept.	120	439	41	500	493	48	58	6	56	57	13	8	220	359	357	71.8	72.5	141	39	42	37
	9 mos.	120	3,787	347	4,310	4,363	448	516	56	552	537	115	73	1,969	3,296	3,228	76.5	74.0	1,015	309	211	391
Norfolk & Western	Sept.	2,133	13,722	294	14,641	16,867	2,102	2,170	307	2,817	3,345	680	344	4,239	10,111	11,271	69.1	66.8	4,530	2,933	2,457	3,011
	9 mos.	2,134	115,126	3,053	123,937	142,184	19,514	20,735	2,803	27,360	30,320	6,063	2,945	39,672	95,056	102,571	76.7	72.1	28,882	19,871	15,316	20,194
Norfolk Southern	Sept.	612	842	....	855	1,032	180	186	13	126	115	28	44	260	662	695	77.5	67.4	192	80	57	102
	9 mos.	617	7,180	....	7,276	8,318	1,619	1,802	118	1,107	1,078	250	440	2,291	5,972	6,347	82.1	76.3	1,304	550	404	629
Northern Pacific	Sept.	6,866	15,276	685	17,137	16,804	2,318	2,656	272	2,416	2,929	464	425	6,055	11,988	12,402	70.0	73.8	5,149	1,807	3,286	1,977
	9 mos.	6,866	110,800	5,439	126,298	135,411	20,863	23,983	2,402	24,622	25,543	4,129	3,129	52,060	107,464	110,381	85.1	81.5	18,834	11,359	9,557	11,563
Northwestern Pacific	Sept.	331	1,326	7	1,363	1,067	293	229	23	97	93	4	7	365	783	724	57.4	67.9	580	204	183	55
	9 mos.	331	10,265	36	10,555	9,989	2,733	2,693	187	866	985	37	50	3,290	7,134	7,424	67.6	74.3	3,421	1,210	724	542
Oklahoma City-Ada-Atoka	Sept.	132	77	....	78	75	19	23	2	2	1	....	2	19	48	49	61.7	65.9	30	13	5	3
	9 mos.	132	937	....	946	798	185	196	24	14	12	....	17	183	446	440	47.2	55.1	500	200	181	124
Pennsylvania	Sept.	10,051	52,349	10,071	70,327	86,759	8,176	12,209	1,385	14,480	19,657	2,941	1,137	30,905	57,450	72,030	81.7	83.0	12,877	4,959	5,682	6,095
	9 mos.	10,051	474,572	95,556	639,239	791,573	74,330	105,647	12,840	139,661	174,893	26,682	11,100	287,639	539,496	648,534	84.4	81.9	99,743	44,490	33,959	63,829
Pennsylvania-Reading Seashore Lines	Sept.	358	592	224	850	1,006	190	332	14	104	109	22	14	509	852	1,070	100.3	106.3	—3	99	—254	—380
	9 mos.	358	5,285	1,711	7,208	7,797	1,745	2,066	217	935	941	196	108	4,488	7,634	8,483	105.9	108.8	—426	803	—2,550	—2,994

(Table continued on next left-hand page)

NEW SP DOME CAR AIR CONDITIONED with TWO WAUKESHA Ice Engines



Waukesha Propane Ice Engine Unit, 7-10 tons, is a four-cylinder, four-cycle, propane-fueled internal combustion engine and a reciprocating type refrigerant compressor, in a sound-absorbing steel housing cushion-wheel mounted on roll-out tracks under the car.

● The new Southern Pacific dome car seats 64 passengers on two levels but under the same dome—48 in the lounge-observation upper level, and 16 in the cocktail lounge six steps below. The 81-ft. car was built in SP's Sacramento shops. The dome, 62-ft. long, is about 20-in. higher than a standard coach.

The car has two independent air conditioning systems, being equipped with two 7-10 ton Waukesha Railway Ice Engines each of which is an independently operated, propane-engine driven, mechanical refrigeration unit. Waukesha units and their fuel tanks are below the car frame.

Southern Pacific today owns several hundred Waukesha engine-driven air conditioning and electric generating Enginator® units. The railroad has been using Waukesha units on passenger trains since 1936.

SEND FOR DESCRIPTIVE BULLETINS

RAILWAY DIVISION

WAUKESHA MOTOR COMPANY • Waukesha, Wisconsin

Largest Builders of mobile engine-driven Refrigerator and Generator Equipment

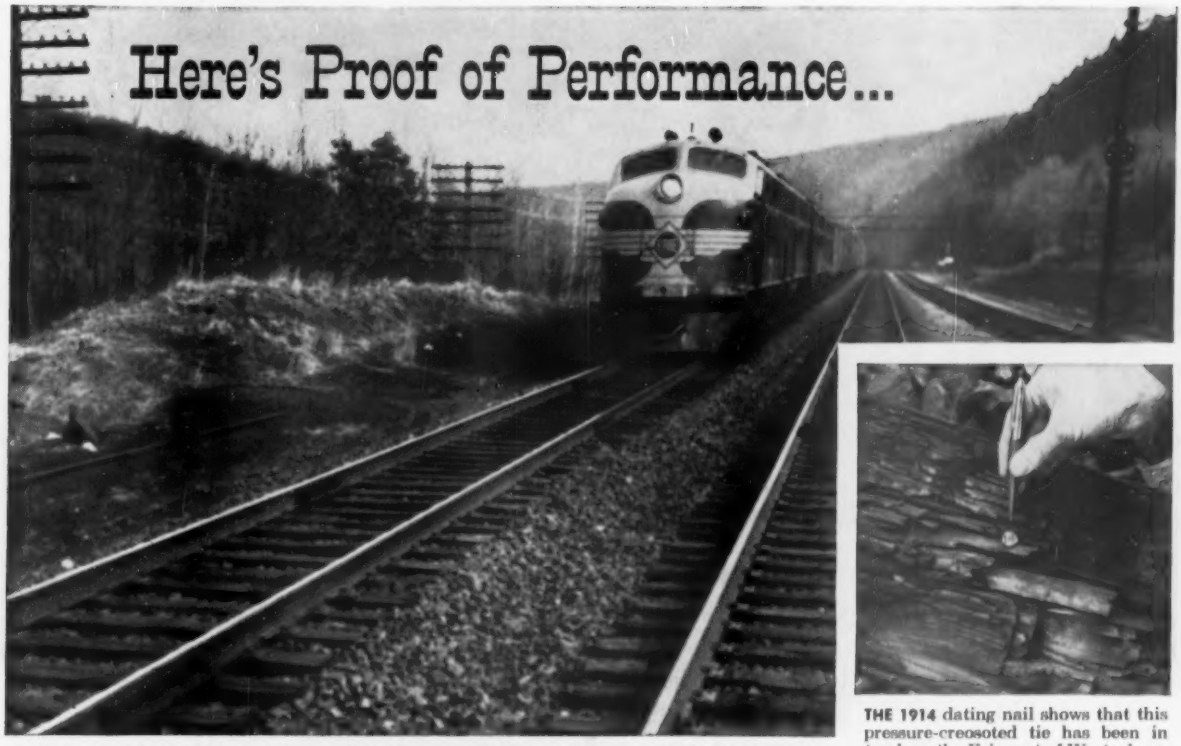
260

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues				Operating Expenses: Maint. Way and Structures			Operating Expenses: Maint. Equipment			Operating Expenses				Operating ratio		Net from railway operation	Railway tax accruals	Net railway operating income	
			Freight	Pass.	Total (inc. misc.) 1954	Total (inc. misc.) 1953	Total 1954	Total 1953	Deprec. and Retirements	Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	1954	1953			1954	1953
Pittsburg & Shawmut	Sept.	97	142	....	142	211	37	56	4	56	47	12	6	36	141	171	99.3	81.0	1	5	28	58
	9 mos.	97	1,399	....	1,406	1,813	298	445	33	430	444	106	42	337	1,204	1,478	85.6	81.5	203	47	440	552
Pittsburgh & West Virginia	Sept.	132	604	....	607	714	99	149	24	118	189	36	62	167	481	616	79.2	86.3	126	28	99	82
	9 mos.	132	5,411	....	5,440	6,994	882	1,225	212	1,096	1,632	325	553	1,512	4,367	5,337	80.3	76.3	1,073	226	779	1,083
Reading	Sept.	1,305	7,684	538	8,836	10,891	1,089	1,628	198	1,804	2,176	431	159	3,370	6,830	8,336	77.3	76.5	2,006	659	1,212	1,406
	9 mos.	1,305	70,196	4,981	80,832	100,180	10,046	15,057	1,792	15,887	20,231	3,930	1,417	32,935	63,959	77,037	79.1	76.9	16,873	5,587	9,944	12,793
Richmond, Fredericksburg & Potomac	Sept.	118	1,181	416	1,879	1,978	304	366	24	314	311	70	24	663	1,424	1,484	75.8	75.0	455	225	170	142
	9 mos.	118	12,440	4,655	19,760	20,989	2,643	3,427	228	3,004	2,682	630	202	6,588	13,662	14,129	69.1	67.3	6,099	2,760	2,244	2,413
Rutland	Sept.	392	345	....	388	474	79	88	9	44	56	12	22	155	325	371	83.8	78.3	63	28	4	50
	9 mos.	392	3,033	—2	3,399	3,746	694	686	62	492	566	111	208	1,434	3,065	3,426	90.2	91.5	334	226	—128	—118
Sacramento Northern	Sept.	265	254	....	265	306	50	74	6	17	12	3	2	87	167	211	63.1	68.9	98	21	54	48
	9 mos.	265	1,880	....	1,943	3,709	612	538	83	134	189	32	21	661	1,520	1,619	78.2	43.6	423	159	87	1,140
Ft. Louis-San Francisco	Sept.	4,601	8,378	446	9,551	10,875	1,455	1,630	150	1,574	1,758	527	353	3,764	7,654	8,033	80.1	73.9	1,896	905	1,033	1,215
	9 mos.	4,601	75,594	3,932	86,250	97,014	13,658	14,903	1,343	14,680	15,864	4,636	3,169	33,756	70,008	73,041	81.2	75.3	16,243	6,884	7,583	10,883
St. Louis, San Francisco & Texas	Sept.	159	305	4	331	265	49	60	5	31	31	1	24	149	261	298	78.9	112.3	71	15	—1	6
	9 mos.	159	3,284	37	3,511	4,001	420	551	50	296	340	10	231	1,369	2,416	2,672	68.8	66.8	1,095	389	270	383
St. Louis Southwestern Lines	Sept.	1,562	4,438	20	4,632	5,278	665	1,059	61	592	732	106	205	1,366	2,994	3,710	64.6	70.3	1,638	720	770	707
	9 mos.	1,562	42,156	162	43,898	55,514	6,311	9,284	484	5,664	6,247	952	1,574	13,691	28,875	33,572	65.8	60.5	15,023	8,383	4,438	8,062
Seaboard Air Line	Sept.	4,064	9,121	791	10,821	11,095	1,498	1,542	215	2,047	2,067	540	340	3,655	8,016	8,067	74.1	72.7	2,805	1,089	1,725	1,790
	9 mos.	4,073	93,364	9,423	112,032	119,417	16,954	18,463	1,686	20,069	20,882	4,810	3,211	36,939	81,701	85,152	72.9	71.3	30,331	11,476	16,917	18,254
Southern Railway	Sept.	6,286	17,731	1,187	20,492	23,092	2,992	3,041	267	3,322	4,156	750	411	6,534	14,267	15,405	69.6	66.7	6,225	3,049	2,868	3,411
	9 mos.	6,286	155,066	12,148	182,814	207,380	26,455	27,333	2,262	33,504	36,507	7,102	3,804	59,579	132,269	139,333	72.4	67.2	50,545	23,789	23,490	30,927
Alabama Great Southern	Sept.	326	1,246	59	1,424	1,587	228	259	32	309	328	57	40	471	1,149	1,155	80.7	72.8	275	90	151	255
	9 mos.	326	11,189	602	13,012	15,141	2,044	2,193	274	2,527	3,115	538	308	4,009	9,592	10,650	73.7	70.3	3,420	1,366	1,737	2,236
Cinn., New Orleans & Texas Pacific	Sept.	337	2,914	123	3,197	3,635	477	432	45	58	724	134	77	775	2,067	2,252	64.6	62.0	1,130	684	474	607
	9 mos.	337	27,939	1,436	31,239	36,050	4,328	3,962	389	5,373	7,268	1,185	656	7,836	19,507	21,763	62.4	60.4	11,732	6,342	5,321	6,488
Georgie Southern & Florida	Sept.	475	589	42	690	727	213	179	8	72	61	6	18	234	578	533	83.8	73.3	112	37	—52	14
	9 mos.	406	5,794	640	7,112	7,456	1,740	1,501	81	611	664	58	174	2,354	5,274	4,690	74.2	62.9	1,838	355	66	558
New Orleans & Northeastern	Sept.	203	832	41	928	1,085	188	166	20	170	131	41	23	236	691	580	74.4	53.4	237	145	85	178
	9 mos.	203	7,947	406	8,968	10,407	1,806	1,477	185	1,282	1,125	371	183	2,131	5,921	5,225	66.0	50.2	3,046	1,859	1,191	1,839
Southern Pacific	Sept.	8,121	37,041	2,685	42,380	46,000	5,466	5,187	529	9,084	9,619	1,882	894	16,575	34,159	34,863	80.6	75.8	8,220	3,435	3,960	4,349
	9 mos.	8,120	320,031	26,286	371,057	417,606	45,243	49,552	4,467	78,870	85,384	16,727	7,625	148,037	298,060	317,823	80.3	76.1	72,998	32,548	29,943	36,977
Texas & New Orleans	Sept.	4,288	9,219	500	10,416	11,499	2,082	1,828	194	1,452	1,590	146	275	3,924	8,274	8,286	79.4	72.1	2,142	542	602	789
	9 mos.	4,290	83,983	4,840	95,139	110,450	17,379	18,681	1,238	13,504	14,727	1,293	2,452	35,785	74,320	78,682	78.1	71.2	20,819	7,403	4,636	9,161
Spokane International	Sept.	152	320	1	335	331	46	65	2	26	24	10	6	78	170	188	50.8	56.7	165	63	71	65
	9 mos.	152	2,402	6	2,524	2,643	483	552	21	231	209	86	50	654	1,531	1,536	60.6	58.1	993	281	478	532
Spokane, Portland & Seattle	Sept.	944	2,391	79	2,610	2,733	369	455	52	419	393	110	30	819	1,733	1,777	66.4	65.0	878	315	428	689
	9 mos.	944	19,730	729	21,724	24,188	3,154	3,498	454	3,444	3,223	960	264	7,389	15,105	15,089	69.5	62.4	6,620	2,000	3,924	4,969
Tennessee Central	Sept.	286	375	1	395	407	75	83	6	56	62	22	14	127	298	312	75.5	76.5	97	27	26	30
	9 mos.	286	3,168	13	3,360	3,820	684	819	52	524	604	200	114	1,123	2,673	3,008	79.5	78.7	688	219	153	261
Texas & Northern	Sept.	8	76	....	80	124	5	4	....	7	6	2	1	7	24	26	29.6	20.7	57	1	30	26
	9 mos.	8	628	....	662	1,155	35	44	4	76	66	23	9	71	236	265	35.6	22.9	427	11	247	260
Texas & Pacific	Sept.	1,831	5,203	312	6,053	7,141	904	1,030	129	1,055	912	247	174	2,057	4,524	4,583	74.7	64.2	1,530	642	636	1,232
	9 mos.	1,832	49,610	3,124	57,527	65,681	9,222	9,345	939	9,772	10,242	2,197	1,748	19,374	43,260	44,543	75.2	67.8	14,267	5,260	5,771	9,557
Texas Mexican	Sept.	161	214	....	231	252	56	46	6	29	30	10	9	61	173	167	75.0	66.3	58	24	15	16
	9 mos.	161	1,878	....	2,004	2,552	502	488	54	249	289	88	80	558	1,564	1,622	78.1	63.6	440	162	86	286
Toledo, Peoria & Western	Sept.	239	545	....	554	683	96	102	6	59	87	11	44	129	369	417	66.6	61.0	185	75	59	76
	9 mos.	239	5,086	....	5,166	5,871	861	1,009	59	502	470	101	406	1,180	3,293	3,464	63.7	59.0	1,874	788	563	755
Union Pacific	Sept.	9,816	37,009	2,742	42,825	48,054	5,641	6,104	473	7,619	8,446	1,571	904	15,203	31,587	34,258	73.8	71.3	11,237	5,195	3,578	3,589
	9 mos.	9,817	303,369	24,605	355,165	393,530	45,876	55,849	4,182	66,140	74,719	13,140	9,193	129,167	269,792	299,623	76.0	76.1	85,373	47,958	20,706	20,284
Utah	Sept.	99	115	....	115	134	17	19	2	25	33	9	1	36	87	99	75.2	73.8	29	9	20	30
	9 mos.	105	709	....	710	928	134	171	17	340	368	81	7	263	812	938	114.3	101.1	—102	80	—159	—4
Virginian	Sept.	611	2,881	1	3,011	3,289	433	530	62	651	791	201	47	647	1,866	2,277	62.0	69.2	1,145	696	638	661
	9 mos.	611	25,902	12	26,890	28,621	3,832	3,993	561	5,815	6,644	1,747	409	6,268	17,134	19,055	63.7	66.6	9,757	5,603	5,694	5,472
Wabash	Sept.	2,393	7,942	428	9,126	10,694	1,117	1,354	116	1,117	1,392	361	292	4,001	6,941	7,708	76.1	72.1	2,186	690	928	1,268
	9 mos.	2,393	71,421	3,584	81,501	90,792	10,721	11,640	1,205	12,070	11,802	3,247	2,745	34,883	64,056	66,665	78.6	73.4	17,445	5,564	6,243	9,865
Ann Arbor	Sept.	294	693	....	711	736	90	111	7	134	140	30	28	312	584	639	82.2	86.8	127	44	60	29
	9 mos.	294	6,369	....	6,529	7,092	863	927	64	1,203	1,119	273	258	2,931	5,445	5,311	83.4	74.9	1,084	396	417	782
Western Maryland	Sept.	857	3,196	4	3,404	4,199	528	522	114	651	738	217	94	1,053	2,522	2,691	74.1	64.1	882	379	607	980
	9 mos.	857	29,067	35	30,946	38,328	4,363	4,906	572	5,874	6,442	1,952	858	10,034	22,878	24,746	73.9	64.6	8,068	3,857	5,687	8,109
Western Pacific	Sept.	1,193	3,926	181	4,196	5,055	784	748	75	698	657	178	231	1,227	3,181	3,204	75.8	63.4	1,015	452	461	1,028
	9 mos.	1,193	32,927	1,913	35,659	45,083	6,596	7,510	732	5,858	6,028	1,554	1,757	11,549	27,920	30,202	78.3	67.0	7,739	3,414	3,781	6,513
Wisconsin Central	Sept.	1,042	2,203	24	2,385	2,694	370	336	38	426	389	79	72	1,014	2,000	1,879	83.9	69.7	385	161	—7	348
	9 mos.	1,042	20,073	367	21,747	24,583	3,704	3,530	339	3,704	3,952	694	641	8,904	17,944	18,368	82.5	74.7	3,804	1,165	1,357	2,589



WESTBOUND Erie train at a point east of Lackawaxen, Pa. Erie trains supported by pressure-creosoted ties in 1953 carried nearly 27 billion gross ton miles of freight and equipment plus nearly 10 million passengers.

THE 1914 dating nail shows that this pressure-creosoted tie has been in track on the Erie east of Westcolang, Pa., for 40 years.

Erie Railroad has used *pressure-creosoted* ties since 1914

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Blair Blowers, Chief Engineer, estimates that it would cost the railroad two to three times as much to use untreated ties as it does to use pressure-creosoted ones. "You just can't compare pressure-creosoted ties with untreated wood for long life, dependability, and economy," he adds.

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BLAIR BLOWERS, Chief Engineer of the Erie Railroad.

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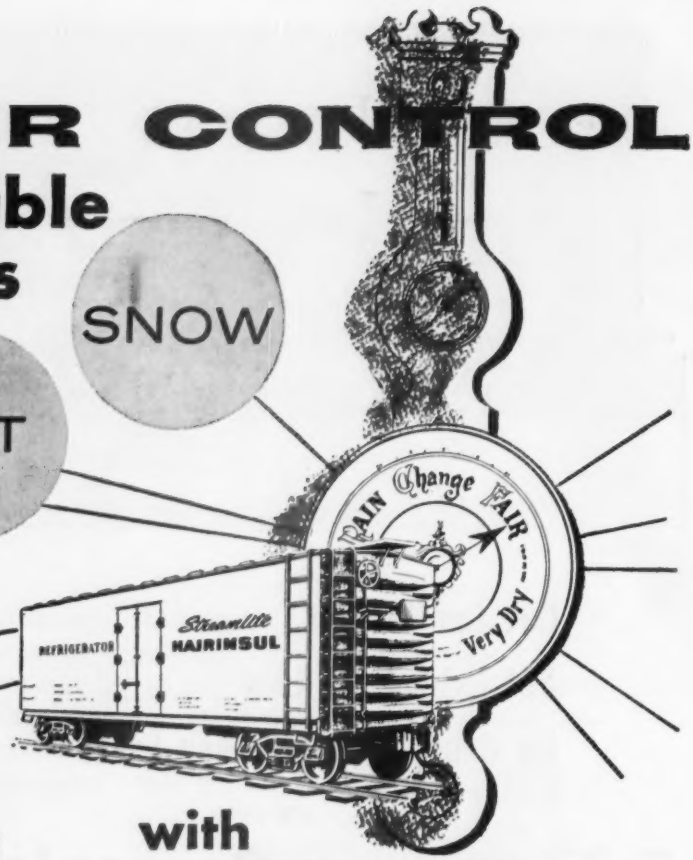

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Current Publications

PAMPHLETS

BULLETIN NO. 90. 183 pages, illustrations, drawings. Railway & Locomotive Historical Society, Baker Library, Harvard Business School, Boston. $2 to members; $3 to nonmembers.

This bulletin continues with the third installment of Fred Jukes' history of locomotive valve gears; those considered in this section are of the Walschaerts principle and the Stevart gears. The bulletin also contains the second part of Charles E. Fisher's article on steam locomotives of the Pennsylvania system. Other articles cover the Memphis division of the Southern; locomotives of the Rutland and its subsidiary lines, and of the Adirondack & St. Lawrence and St. Lawrence & Adirondack; a history of the Elkhart & Western; another Newton paper on the Aurora Branch, featuring Aurora's first depot; some comments on a letter of 1833 from the Baltimore & Ohio to the Stockton & Darlington Railway in England; the marl trains of the Camden & Amboy; and the McConnell locomotives, as developed by J. H. McConnell, one-time superintendent of motive power of the Union Pacific.

•

NOTES ON RAILROAD LOCATION AND CONSTRUCTION PROCEDURES FROM THE SCHOOL OF EXPERIENCE, by J. A. Given. 43 pages. American Railway Engineering Association, 59 E. Van Buren st., Chicago 5. Single copies, 50¢; quantity discounts.

The author, out of his long and rich experience, has jotted down, as it were, many of his observations over the years, with the thought that they may benefit young engineers who may become engaged in such work. The booklet contains chapters on reconnaisance, preliminary surveys, location, and construction, all of which include a large amount of practical data, short-cuts, and "tricks-of-the-trade"—learned the hard way and from association with other experienced engineers—and not to be found in the usual textbooks. It is prefaced by a general chapter which contains valuable suggestions respecting the personal qualifications of engineers and their relationship to engineering work. It is not intended as a complete textbook on the subject; rather, it is supplementary to those texts.

BROCHURE

THE SKILLED LABOR FORCE. 52 pages. Technical Bulletin T-140, April 1954. Bureau of Apprenticeship, U.S. Department of Labor. Government Printing Office, Washington 25, D.C. 45¢.

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MAPS

LIST OF MAPS SHOWING RAILWAY LINES, revised October 1953. 17 pages. Association of American Railroads, Transportation bldg., Washington 6, D.C. Free.

Lists more than 200 maps and atlases, with addresses of publishers. Included are United States maps, regional maps, state maps and individual railroad maps.

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MAP OF THE LACKAWANNA RAILROAD AND CONNECTING RAILROADS. 29½ in. by 21 in. Lackawanna Railroad, Industrial Development dept., 140 Cedar st., New York 6. Free.

Shows multiple-track and single-track lines of the Lackawanna in red and connecting railroads in black. Coal dumpers are indicated and insert maps show routes of Pullman services, Hoboken-Jersey City terminal, electrified suburban trackage, and New York harbor connections. The map folds into a booklet-type folder, 9 in. by 4 in., which lists Lackawanna service agencies.

ANNUALS

APPLICATION OF ELECTRICITY TO RAILWAYS, 1953. A Bibliography. 46 pages. Bureau of Railway Economics Library, Association of American Railroads, Transportation bldg., Washington 6, D.C. Free.

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ACCIDENT FACTS, 1954 Edition. 96 pages. National Safety Council, 425 N. Michigan ave., Chicago 11. Single copies, 75¢; less for quantities.

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STATISTICS OF RAILWAYS OF CLASS I, UNITED STATES, CALENDAR YEARS 1939 to 1953. 14 pages. Association of American Railroads (Bureau of Railway Economics), Transportation bldg., Washington 6, D.C. Free.

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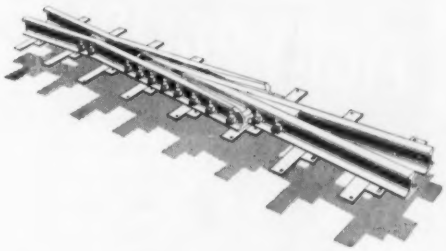
FREIGHT COMMODITY STATISTICS, CLASS I STEAM RAILWAYS IN THE UNITED STATES FOR THE YEAR ENDED DECEMBER 31, 1953. 278 pages. Interstate Commerce Commission (Bureau of Transport Economics and Statistics). Available from Government Printing Office, Washington 25, D.C. $3.



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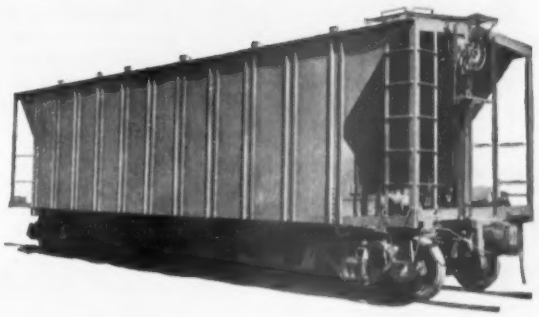

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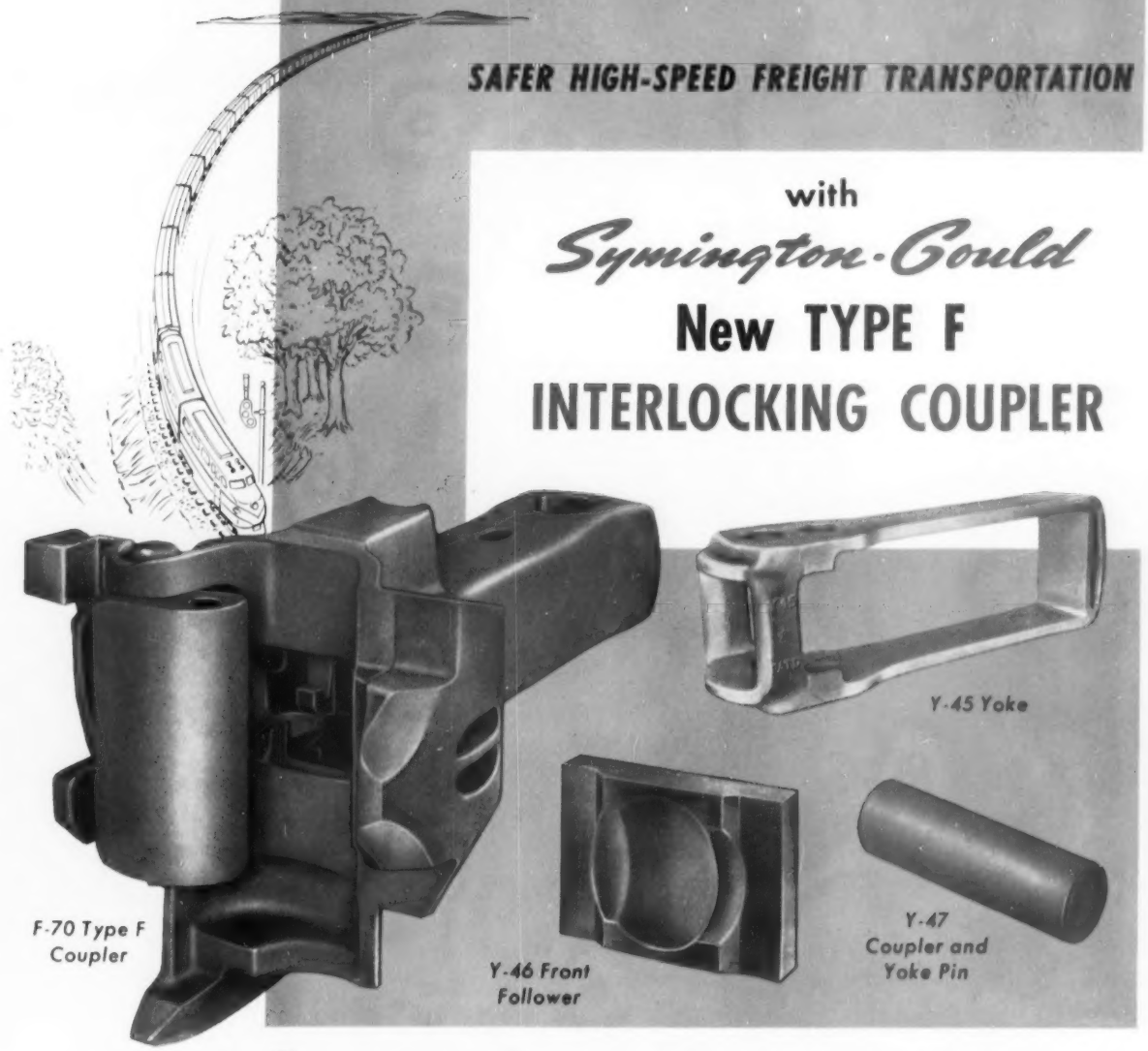
SAFER HIGH-SPEED FREIGHT TRANSPORTATION

with

Symington-Gould

New TYPE F INTERLOCKING COUPLER



9 IMPORTANT FEATURES OF THIS NEW IMPROVED COUPLER

- Reduction of free slack
- Couples with any existing standard A.A.R. Coupler
- Interlocking feature prevents vertical slip-overs and serves to keep cars in alignment, preventing climbing or overturning in event of derailment
- Safety shelf on F Coupler is designed to support mated coupler in event of pull-out
- Threefold anticreep protection
- Easier operation
- Increased service life
- Increased strength
- Lower maintenance cost with Type F Coupler contours holding gage longer because of restricted vertical movement and reduced free slack

THE SYMINGTON-GOULD CORPORATION

Works: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • *In Canada:* ADANAC SUPPLIES, LTD., Montreal, Que.

Visibility Unlimited!

with G·R·S CAB SIGNALS

IN BAD WEATHER . . .

G-R-S Cab Signals ride in the cab with the engineman. Their aspects are *always* visible, regardless of terrain and weather. The engineman proceeds at maximum permissible speed, even in storm or fog.

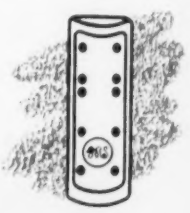
IN GOOD WEATHER . . .

Even when outside visibility is good, G-R-S cab signals help trains move faster. The engineman is notified of changed traffic or track conditions the moment they occur. When a more favorable aspect appears, he accelerates promptly. No time is lost running at needlessly low speed to the next wayside signal. All year 'round you get higher average speed, which means higher track capacity, better on-time performance.

USE WITH A-C. OR D-C. CODED TRACK CIRCUITS . . .

Development by G-R-S of a-c./d-c. coded cab signals makes possible wider, more economical use of cab signaling. In the past, cab signals have required coded a-c. track circuits using special a-c. frequencies. G-R-S a-c./d-c. cab signals operate not only on this type of track circuit, but also on coded track circuits using d.c., commercial 60-cycle a.c., and half-wave rectified a.c. The same equipment works interchangeably over all these circuits, needs no switching when moving from one to the other. In many cases, you can now have cab signaling on existing coded track with no change in your present wayside circuits.

Our engineers will be glad to show you how G-R-S cab signals can help your road. Ask your G-R-S district office to get you this service.



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